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CUMENTS

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The Economic Bulletin for Latin America has been published by the secretariat of the Economic Commission for Latin America twice yearly since 1956. The essential purpose of this periodical is to provide a résumé of the economic situation of the region designed to supplement and bring up to date the information published in the Commission's annual economic surveys. Apart from this summary, which is to appear in every issue, special articles on different subjects related to the economy of Latin America are included, as well as informative and methodological notes.

The ECLA secretariat assumes entire responsibility for the *Bulletin*. Its content—intended for the information both of public officials and of the general reader—was not submitted to the Commission's member Governments before publication.

Since October 1958 the *Bulletin* has regularly included a Statistical Supplement. This subsequently became large enough to warrant separate publication, one issue being published in 1960, another in 1961 and two in 1962, each being bilingual with the corresponding table of contents. Since 1964, a new publication, the *Statistical Bulletin for Latin America,* has been issued twice a year, to provide the public with a regular flow of statistical data on economic matters.

EXPLANATION OF SYMBOLS

Three dots (. . .) indicate that data are not available or are not separately reported.

A dash (—) indicates that the amount is nil or negligible.

A minus sign (—300) indicates a deficit or a decrease.

A stroke (/) indicates a crop year or a fiscal year, e.g., 1954/55.

An asterisk (*) is used to indicate partially or totally estimated figures.

"Tons" and "dollars" are metric tons and United States dollars, respectively, unless otherwise stated.

Minor discrepancies in totals and percentages are due to rounding.

SELECTION OF TECHNIQUES: PROBLEMS AND POLICIES FOR LATIN AMERICA

IGNACY SACHS*

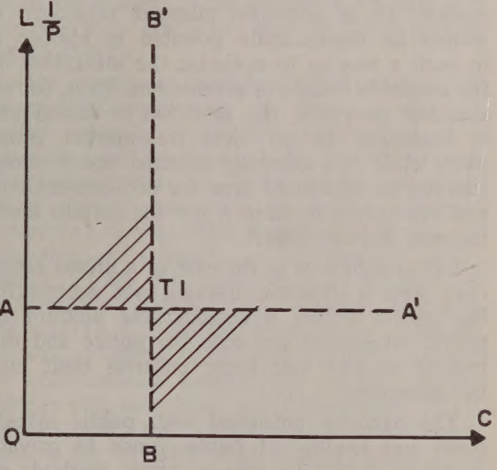
INTRODUCTORY REMARKS

If we agree, as a first approximation, to define a technique by the amount of fixed capital necessary to produce a unit of output (or in other words the capital-output ratio, c) and the labour input per unit of output (i.e., the reverse of labour productivity, p), the problem of the selection of a technique will arise whenever it is possible to produce the same output by alternative methods, which are efficient, i.e., compensate for higher fixed capital investment by lower labour inputs or vice versa. The problem is illustrated in figure I. Let T_1 be a reference technique characterized by labour input OA and capital investment OB. All techniques inside the angle A T_1 B will be better than T_1, as requiring at the same time less capital and less labour. The problem of selection does not arise: they should be preferred to T_1. All techniques situated inside B T_1 A′ are worse than T_1 because they require at the same time more capital and more labour; such techniques are therefore inefficient and should be disregarded. But all the techniques inside A T_1 B′ and B T_1 A′ are efficient: those inside A T_1 B′ require less capital but more labour than T_1, while those inside B T_1 A′ require more capital and less labour inputs than T_1.

To choose the best technique out of the set of all efficient ones according to the factor proportions prevailing in a given economy, we must know the marginal rate of substitution between capital and labour, i.e., how many units of additional fixed capital we are ready to sacrifice in order to save one unit of labour input on current costs of production. In other words, we must know the length of the prevailing or postulated recoupment period of the invested capital, which is just a convenient way of expressing the cost of capital. If the recoupment period is n years, it will pay off to substitute up to n units of capital for one unit of yearly labour costs.[1]

Figure I

SELECTION OF TECHNIQUES



Let us imagine two techniques with the following features:

	Technique A	*Technique B*
Fixed investment per unit of output	100	200
Labour input per unit of output per year	100	80

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[1] Needless to say, the recoupment period is not tantamount to the actual life span of the equipment. All the complications we have been dealing with in this paragraph arise from the fact that we are in presence of a stock (capital) and a flow (labour).

Technique B is more capital-intensive, as it requires 100 units of additional investment, and allows in compensation for saving 20 units of labour per year. Technique B will be preferred whenever the recoupment period n is longer than 5 years. For $n < 5$ (i.e., in situations where capital is very expensive), the more labour-intensive technique A will be preferred.

The choice will thus depend on the value of the parameter n.

Now, in a free market economy n is given by the prevailing rate of interest on borrowed capital. The entrepreneur has no problems in reducing fixed investment and current costs to a common denominator and of choosing the technique which, given a price and a capital market structure, allows for minimum production costs, so long as we do not take into account any possible difficulty of access to capital. In a centrally planned economy it should be theoretically possible to choose n in such a way as to optimize the utilization of the available factors of production. Thus, for all practical purposes, the selection of techniques is automatic in an ideal free-market economy, while in a centrally planned one it could become an important area for decision-making and optimization, were it not for certain institutional shortcomings.[2]

Let us turn now to the case of a mixed economy with a dynamic thought not necessarily big public sector, a considerable amount of public investment (in both the public and the private sector) and some controls built into the economy.

The agencies entrusted with public investment and lending of public funds to private investors should be able to apply methods of project evaluation similar to those of the centrally planned economies. Such methods consist in using in one way or another criteria of macro-economic and macro-social benefit instead of micro-economic entrepreneurial ones, based on profit expectation within the prevailing market and price structure.[3] Of course, we assume here implicitly that collective long-term interests do not necessarily coincide with those of individual profit-motivated enterprises, or, in other words, we recognize the need for State intervention into the realm of economic affairs, with both an economic and a social purpose.

Is, however, intervention with respect to the selection of techniques at all possible within the private sector of the economy?

Without ignoring the difficulties involved and the narrow limits manœuvre, this paper will endeavour to reply in the affirmative to this question. On the one hand, it should be possible to influence private investors' choices (whenever alternatives exist, which is not always the case) out of the available stock of techniques through adequate price, credit, trade and fiscal measures. On the other, the supply of alternative techniques should be increased by means of vigorous and purposeful science and research policies. Finally, some results could be obtained by influencing the output-mix of the economy by means of action of the demand pattern mainly through income policies and a judicious catalytic use of public investment.

Policies with respect to selection of techniques should thus become an integral part of development policies in spite of all their limitations, or rather because of those limitations. The lesser the scope for choosing techniques according to their capital-labour ratio, the more important it becomes not to miss the opportunities of lowering that ratio in selected areas of activity where they really exist, as for example in agriculture, building, certain public works, ancillary activities in industry, etc. At any rate, the process of industrialization is bound to include many projects with high capital-labour ratios, so that at best all we can hope for is to mitigate the unfavourable relationship between increases in industrial output and employment creation. We assume the selection of techniques to follow, in principle, the choice of the output-mix, based on considerations of market, resource availabilities, and the requirements of the adopted strategy of growth. But feedbacks are possible, i.e., the pressure of employment goals may motivate biasing the proposed output-mix in favour of activities where labour-intensive techniques exist, to the extent to which some substitutions in the demand pattern may be feasible.

The same observation applies to foreign trade: exports of goods produced by labour-intensive techniques should be actively promoted, and even subsidized to a reasonable extent, not because developing countries have necessarily a comparative advantage in such types of production, as is often argued,[4] but because it is for them a more rational way of using the existing resources to overcome the foreign exchange bottleneck.

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[2] Experience shows that project evaluation and comparison of alternative techniques should be separated from investment decision-making and project implementation. If all three functions are concentrated in one hand (e.g., the planning commission), project evaluation may suffer biases and often becomes a justification *ex post hoc* of a choice made on some other ground.

[3] We are not concerned at this point with the different proposed techniques of social cost-benefit analysis. This aspect will be dealt with later on.

Finally, it should be possible in certain countries to step up the rate of over-all growth above the level forecast or planned, by launching an additional popular housing programme, based on locally produced building materials, labour-intensive methods of construction, and even some self-help schemes.

We should like to end these introductory remarks on a note of cautious optimism. Though the incorporation of the selection of techniques into the realm of development policies broadens the area for strategic decision-making, there is bound to be very little elbow-room for manœuvring in the short and medium run, chiefly because of the inexistence of modern techniques devised for the factor proportions prevailing in developing countries. Some improvements can be sought, however, by making the access to existing alternative techniques easier and by reducing the scope for wrong decisions prompted by inadequate policies of support for industrialization which boils down to an excessive lowering of the opportunity cost of equipment for the entrepreneur.

In the long run we see more reasons for optimism than for pessimism, provided it is realized that the key to a less disturbing future lies in a real breakthrough in the realm of science, technology and education. Autonomous scientific and technological development, which is by no means tantamount to a trend towards technical autarchy, should be given utmost priority by Latin American countries, and ways of organizing purposive and concrete co-operation among developing countries should be sought. Many developing countries which managed in the last few years to establish important industries suffer today from a painful technological dependence. Modernization has too often been associated in these countries with a passive reception of patterns and techniques evolved in other contexts, and a certain mood of euphoria with respect to the possibility of producing up-to-date industrial goods goes hand in hand with an inferiority complex with respect to their scientific and technological potential. The field of science does not comprise only nuclear energy and space; many vital areas of fundamental and applied research could and should be developed in Latin America with a view to solving the specific problems of the continent. Nor do we accept the argument that poor countries cannot afford to spend more on science. They should do it precisely because they are poor, and they are looking for short cuts.

Our argument should not be taken as an unqualified profession of faith in the so-called scientific revolution, understood as a panacea and a substitute for social reforms. We believe that the "development potential" of a country rests on a reasonable industrial structure (varying from country to country and changing over time), an institutional set-up which allows for using a fair measure of "operational controls" (in Myrdal's sense of the term),[5] and taking autonomous decisions, as well as on an intellectual structure capable of continuously feeding the socio-economic system with new ideas and technologies. Thus, the scientific and technological breakthrough must come as part of an over-all strategy of attack on under-development, all the more so since, in order to develop, science and technology need a climate of freedom of research and speech incompatible with acute social tensions.

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[4] We should recall here Leontieff's paradox on the comparative advantage of the United States in labour-intensive products.

[5] See Gunnar Myrdal, *Asian Drama,* vol. III, New York, 1968.

I. A PEEP AT SOME THEORETICAL CONTROVERSIES

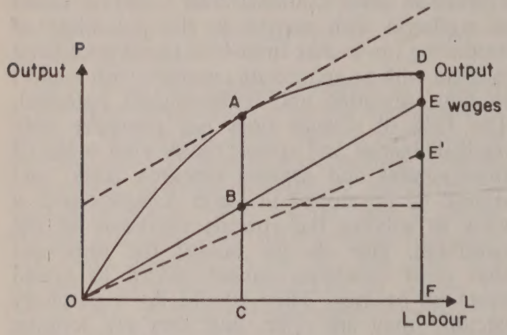
Before beginning the analysis of the Latin American experience we shall very briefly refer, without any pretension of being exhaustive, to some of the discussions which have been raging for quite a time and seem relevant to our subject.

1. *A macro-economic conflict: income versus surplus maximization?*

Given a limited stock of capital and a postulated level of real wages, should we strive to maximize output by spreading capital over a large number of working posts or, on the contrary, should we make use of more capital-intensive techniques, which maximize investment surplus?[6]

Figure II illustrates the controversy.

Figure II



Income is maximum when we reach D, but surplus is maximum at the point A where the marginal productivity of labour equals the wage. The first alternative is advantageous in the short run, as consumption E F is higher than B C and employment O F exceeds O C. But the future rate of growth depends on investment and surplus A B is higher than D E. Thus, choosing the income maximization in the short run means compromising the pace of income increases over time. The longer the time-horizon considered, the more advantageous the second alternative looks. We thus reach the conclusion that even under-developed countries with scarce capital and plentiful labour resources should resort to capital-intensive techniques of production.

Sen's argument is unquestionable, so long as we accept the assumptions of his model: there are no exogenous inflows of capital apart from the initial stock; no technical progress takes place; and income distribution is perfectly even.

Now, one may argue that such assumptions are not very realistic. Accumulation takes place not only in the modern sector, just started from scratch, but also in the traditional sector, so there is bound to be each year some inflow of exogenous capital, even if we disregard foreign loans. In these circumstances the opposition between the two maxima becomes less. The introduction of technical progress into the model would have the same effect. As for the income policies, either of two things may happen. On the one hand we may really operate a perfectly egalitarian economy and then the case for manipulating with a rate of increase of real wages in the context of a dynamic economy[7] becomes quite strong: it might be conceivable to lower the postulated rate of increase of real wages, and to keep at the same time the employment role large enough as to enable total consumption F E′ to exceed B C, while surplus DE′ becomes equal to A B. On the other hand, the social distribution of income may be skewed, and then the whole problem becomes immaterial to the extent to which it would be possible to reconcile, by adequate income and fiscal policies, high levels of investment with reasonable levels of popular consumption: the stepping up of investment should take place on the basis of high marginal savings ratios imposed on higher income classes.[8]

At this stage we should observe that Sen's findings are often misinterpreted by private industrialists in developing countries, who are eager to find social arguments in favour of profit-maximizing techniques at the level of the individual enterprise. Needless to say, their argument is invalidated by their failure to take the implications of the prevailing income distribution into consideration.

In a sense, Sen's model gives a useful insight into one more aspect of the fundamental problem of planning—the need to choose between present and future advantages and the lack of objective criteria for optimization of such choices. But he does not provide the planner with a clear-cut rule of conduct because of the complications already mentioned and, above all, of the limitations which arise, when, from the macro-economic and general level of argument, we get down to earth and try to work out actual technological choices.

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[6] A.K. Sen's *Choice of Techniques: An aspect of the Theory of Planned Economic Development*, 2nd ed. (Oxford, 1962), remains the standard reference on the subject. For an interesting critical analysis see Z. Dobrska, *Wybor technik produkcji w Krajach gospodarczo zacofanych*, Warsaw 1963 (in Polish).

[7] In his important paper on "Determination of the Rate of Growth of a Socialist Economy under conditions of Unlimited Supply of Labour" in vol. 3 of *Essays on Planning and Economic Development* (Warsaw 1968), M. Kalecki advocates using labour-intensive methods in order to draw on the reserves of labour, subject to the condition, however, that at no moment of the growth process should real unit wages fall.

[8] We have dealt with this problem in a paper presented at the Third Inter-regional Seminar on Planning, held in Santiago in March 1968 (ST/TAO/SER.C/110).

2. *Intermediate technology: a panacea?*

The opposite case, stressing the scope for primitive labour-intensive techniques meant to become a major component of the development strategy, is not entirely convincing either.

How far should we go in diluting the capital? Does it make sense to employ people at levels of productivity where value added is not enough to cover the minimum acceptable wage? How big is the real scope for labour-intensive investment activities of the "pick and shovel" variety, i.e., virtually unmechanized? What can we expect from the so-called "intermediate techniques"?[9] The mere enumeration of these questions shows the vastness of the subject. We can at best try to sketch in some replies. We must start, however, by summarizing the arguments in favour of labour-intensive solutions.

The reserves of idle or semi-idle labour, far from being a liability, should be transformed into the major asset of a developing country. By drawing on this resource, it should be possible to carry out extensive investment programmes in the realm of infrastructure and social services and to expand output in agriculture and cottage industries by making use of "Ł 1-technology instead of Ł 1,000-technology" to borrow a symbolical expression from E. F. Schumacher.[10]

Such was the underlying assumption of the Chinese "big leap forward" and, to some extent, of the community development programmes and related schemes sponsored by various Governments in Asia and Africa and United Nations agencies, though the latter were never meant to constitute the main engine of growth of a wholesale strategy.[11]

In reality neither in China, which had at least the advantage of strong social discipline, nor in the non-socialist developing countries, did this kind of programme yield the expected results. The reasons are manifold:

(*a*) The scope for employing techniques which in spite of low capital intensity are efficient and meet the minimum productivity criterion is, at present, quite narrow, *inter alia,* because of lack of substantial research on such techniques;

(*b*) Even in public works straightforward substitution of capital by labour is often difficult, if not quite impossible, because of organizational problems involved and of the extension of the gestation period of the projects under construction;

(*c*) Resorting to voluntary labour is only possible when population has a strong feeling of participation, usually arising out of radical land reforms; even though one should not expect that this capital of goodwill is inexhaustible;

(*d*) Whether paid or no, people in order to work must be adequately fed and there is little hope of mobilizing for this purpose the parcel of food which they would have eaten were they to remain semi-idle in their local village, to say nothing of the fact that their diet must be improved to sustain a reasonable labour productivity; food availability thus sets the upper limit to growth of employment[12] even if we were to suppose that efficient labour-intensive techniques are available in areas of the economy that are worth developing.

But rejection of labour-intensive investment as a wholesale strategy is not tantamount to ignoring the untapped opportunities of a fuller use of labour reserves in developing countries, and, even less, to closing the eye to wasteful uses of capital.

In the same way, we believe, that the partisans of intermediate techniques have a strong point, provided it is reduced to its real proportions and stripped of the missionary zeal often present in discussions on the subject.[13] We quite agree with E. F. Schumacher when he stresses the impossibility of the traditional sector being absorbed in the short and medium run by the modern one and the consequent need of helping the people of the traditional sector (see foot-note 13). Such a view does not imply giving up the expansion of the modern sector but merely re-establishing the proportions hitherto biased almost exclusively in favour of the modern sector. We also agree with Barbara Ward's contention that for 50 years and more practically all research has been concentrated on large-scale, labour-saving technologies, the least suitable for the developing world, and the following conclusion drawn by her: "This is a disproportion which the developed world never knew since it invented and pioneered and adapted its technology to its own needs as the process of development went on. But now the technology exists in its own right and can be purchased and introduced into societies in which in fact it is quite inappropriate. One can see the consequences of this maladjustment very clearly in some parts of Africa today. Inexperienced Governments, trying out their hand in economic decision-making, find it terribly tempting to buy the most up-to-date machinery which persuasive gentlemen from the North Atlantic area come to sell them".[14] Finally we sympathize with D. R. Gadgil's plea for creating large-scale employment out of agriculture in rural areas.[15] Under such circumstances it is very useful indeed to catalogue, diffuse and demonstrate labour-intensive techniques, suitable for small-scale application, whether these techniques are in use today, adapted from past practices, or developed anew for some particular task. More emphasis on studying such techniques is certainly called for, and developing countries should develop, side by side with modern research, a kind of "do-it-yourself research guerrilla";[16] the example of war economy in North Viet-Nam is there to show the potentialities of such approach. But the condition of minimum productivity should never be neglected and, thus, the scope for the application of "intermediate technology" remains narrow even though it should displace more obsolete and altogether inefficient techniques still existing in the traditional sector. Moreover the adjective "intermediate" leads to some confusion; we are speaking in reality of efficient labour-intensive techniques which in a reasonable development strategy should find some useful application side by side with most capital-intensive techniques in other areas of economy. Emphasis on "intermediate technologies" implies, therefore, the acceptance of technological dualism, rather than overcoming it; trying to avoid wide disparities in capital-intensity per worker between one sector of the economy and another as a matter of policy sounds quite unrealistic.[17]

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[9] These techniques are being advocated by the Intermediate Technology Development Group Ltd., in London and the Volunteers for International Assistance in Schenectady, New York.

[10] E. F. Schumacher, Social and economic problems calling for the development of intermediate technology, July 1965 (mimeographed).

[11] Among University economists who in the West worked on the problem, Ragnar Nurske and Arthur Lewis should be mentioned above all. Among the French-speaking economists, Gabriel Ardant is the most active propagandist for the *investissement humain.*

[12] See P. C. Sah: The choice of investment techniques in under-developed economies, vol. 2 of *Essays on Planning and Economic Development* (Warsaw 1968), and by the same author an unpublished Ph. D. thesis, defended in 1968. Dr. Sah shows that the limit of food availability can be exceeded if labour-intensive techniques are employed to earn additional foreign exchange (or to save it through important substitution) in quantities higher than the import requirements of food for the workers employed in these foreign-trade oriented industries.

[13] Schumacher, op. cit. See also the interesting article by C. Bobrowski, "Algerian traditional agriculture" in *Essays on Planning and Economic Development*, vol. 3, Warsaw, 1968, where the methodological consequences of the need to include the traditional sector in the plan are explored.

3. *Making virtue of necessity: technological dualism*

We may now sum up the position. There are many arguments for and against capital-intensive technology. An ILO study[18] lists the following points:

In favour of capital-intensive technology:

(*a*) The building up of an industrial sector employing the most modern and advanced technology is the hallmark of an economically developed country;

(*b*) It is necessary to invest with the future in mind;

(*c*) Advanced technology enables managements and workers to acquire the technical skill and knowledge that are indispensable to a modern economy;

(*d*) The industries with the greatest growth potential are those employing advanced technology;

(*e*) A high degree of capital intensity permits large profits to be made and a large proportion of these profits to be ploughed back to promote faster growth.

Against capital-intensive technology:

(*a*) Advanced industrial technology has developed, in response to the needs of industrially advanced countries with large markets, a relative abundance of capital and entrepreneurial and managerial skills, and a shortage of labour;

(*b*) Transplanting industrial technology to countries where it will operate under conditions for which it was not designed can be an expensive mistake;

(*c*) Countries should not seek to make a sudden break with their past; instead they should develop and adapt their traditional skills, knowledge and techniques;

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[14] Barbara Ward, "The Decade of Development. A study in frustration?" In J. A. Pincus, ed., *Reshaping the world economy—rich and poor countries.* (Englewood Cliffs, New Jersey, 1968), pp. 27-28.

[15] See D. R. Gadgil, "Notes on rural industrialization" in *Artha Vijnana*, vol. VI, No. 1 (March 1964), pp. 9-15.

[16] Michel Leiris, *Cinq études d'ethnologie* (Paris, 1969), p. 142.

[17] This is our only but fundamental quarrel with the stimulating paper, "Progressive Technologies for Developing Countries" by Keith Marsden from the Small Industries Unit, ILO (mimeographed, 1967).

[18] See ILO, Human Resources for Industrial Development (Geneva, 1967), chapter 7, pp. 201-217, condensed in *Development Digest.*

(*d*) Where capital is scarce, capital-intensive technology means concentrating it in a few large plants while keeping the rest of the economy starved of capital, and this accentuates the contrast in living standards between the modern and the traditional sectors while limiting at the same time the number of people that can be gainfully absorbed into the modern sector;

(*e*) If capital-intensive technology does enable a few large, modern plants to make big profits, this does not mean that the total profits, both public and private, for the economy as a whole are necessarily greater. Nor is it necessarily the case that more resources will be invested than if capital had been spread widely.

The obvious conclusion is that a comprehensive development strategy should try to make use of both capital-intensive and labour-intensive technologies, or, in other words, that it should be two-pronged.

From the operational point of view, this means under present circumstances that special attention should be given to reducing the present bias towards capital-intensive technological sectors. We shall briefly discuss both these points.

(a) *Reducing the bias in favour of capital-intensive technology*

As a matter of fact, efficient intermediate technology either does not exist or is hardly known, and the least one can say about experiments with a labour-intensive investment is that they have not hitherto been encouraging.[19] On the other hand, various reasons combine to expose developing countries to an excessive absorption of capital-intensive techniques. Here are the main ones:

(i) Capital and foreign exchange are made available to investors at excessively low rates, while costs of labour are inflated by unsuitable fiscal policies;[20]

(ii) The imperfections of the markets are often strengthened by the irrational working of operational controls over foreign trade and finance, so that profits run very high,[21] enhancing the propensity of the entrepreneurs to use profit-maximizing techniques;

(iii) Lack of appropriate research infrastructure, of equipment-producing industries and of local engineering and designing firms in most cases puts foreign consultant firms and suppliers of equipment and know-how in a position of monopoly;

(iv) This dependence on imitative transfers of capital-intensive technology is enhanced by the mechanisms of foreign direct investment and foreign aid, which, furthermore, frequently distort the investment pattern and give it an unnecessarily high import content.[22]

(v) A false concept of modernity,[23] too often assimilated with foreign-made gadgets and symbols of scientific achievement that are not in harmony with the basic needs of the population,[24] on the one hand gives tremendous prestige to foreign trade marks of companies from developed industrial countries and, on the other, generates a mood of pessimism and a complex of inferiority with respect to all products of local science and industry. Paradoxically enough, unnecessary imports of sophisticated technology and its use by insufficiently trained workers add to the inefficiency of the industrial system.

The ways of remedying this situation are by no means easy. We shall deal with this matter in the last chapter of the present study. Here we shall limit ourselves to indicating the broad approach:

(i) A revision of policies of support to industrialization is called for with a view to increasing the opportunity cost of capital and decreasing the opportunity cost of labour, which is by no means tantamount to decreasing wages;

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[19] We should not forget, however, that the process of rapid industrialization undergone by the Soviet Union and such Eastern European countries as Poland was for quite a time based on "extensive" methods, i.e., large increases in employment and moderate gains in productivity.

[20] The same view is expressed, *inter alia*, in the ILO study already quoted.

[21] Cf. Gunnar Myrdal, op. cit., vol. III, pp. 2077-2108 ("A Note on Positive Operational Controls").

[22] I. M. D. Little calls "an economic horror" an import bias of this kind, so frequently associated with projects financed from abroad, whether from private or from public funds. He goes on to say that the shortage of project-designing capacity accounts for neglecting small projects in favour of big ones (I. M. D. Little, "Aid: Project Programme and Procurement Tying" in *Towards a Strategy of Development Co-operation with Special Reference to Asia* (Rotterdam 1967), pp. 54-56.

[23] For an excellent analysis of the irreducible opposition between "autonomous" and "imitative" (*refleja*) modernization, see Darcy Ribeiro, "Política de Desarrollo Autónomo de la Universidad Latinoamericana", *Gaceta de la Universidad*, Montevideo, April 1968, pp. 27-39.

[24] Exploration of outer space and the armaments race are two instances of scientific rationality put at the service of irrationality, so emphatically exposed by Herbert Marcuse (see, for example, his *One-Dimensional Man*).

(ii) Imports of technology should be continuously scrutinized and made selective on the basis of a long range research and industrial policy;

(iii) At the same time financial and fiscal advantages (tax rebates, subsidies, government contracts) should be given to industrialists who develop and apply domestically designed technologies and purchase locally produced equipment, subject of course to some broad criterion of efficiency of such technologies and equipment;[25] it is to be hoped that such technologies and equipment would be better adapted to the specific conditions and factor proportions of the country concerned (the latter will be better reflected by the price system thanks to fiscal and financial measures mentioned above);

(iv) Such advantages would be meaningless without an elaborate policy of research oriented towards the basic problems of the country and carried out with active support from the State with a view to increasing and diversifying the supply of viable domestically designed techniques;

(v) Although the emphasis in the above policy guidelines has been put on indirect controls, some direct controls, such as scrutinizing and licensing of major industrial projects, seem advisable; the opportunity of entrusting a single government agency with all imports of technology should also be examined;[26] such imports should be dissociated whenever possible from imports of capital;

(vi) Finally, through concerted political, economic and cultural action it is necessary to create a climate of greater self-reliance, which should not be mistaken, however, for autarchy, xenophobia and ethnocentric exaltation of real and imaginary national achievements.

(b) *Co-existence of asynchronic technologies*

It has often been said that India is passing directly from the cow-dung to the nuclear energy age. This is true, but so long as the transition lasts, Indians will continue to live in both ages; for quite a time it will still be possible to find Indians who work in most up-to-date industrial plants but use cow-dung as fuel for their cooking at home.

So long as such asynchronism opposes industrial economy to household practices, the conflict is not dangerous, at least economically. But the problem becomes quite different when an artisan-type workshop must face the competition of a modern plant. Free access of British manufactured goods to the Indian market in the past ruined local crafts that had been flourishing. It is true that history passed the same verdict on European crafts and cottage industries in the nineteenth century, but if the destructive process was no less intense, the opportunities of getting jobs in the new industries were probably bigger, as production processes were still quite labour-intensive and the numbers of competing workers were not so frightfully big in relation to the plants which were being built; even so, Europe paid an excessively high price, in social terms, for industrialization and was unable to solve the employment problems until the middle of the twentieth century. At any rate, with the present galloping population growth in the developing countries and the prevailing capital-intensity in production processes, a repetition of the European path becomes altogether impossible. In these circumstances, protection must be offered to crafts and cottage industries, on social if not on economic grounds, as it would be unwise to add to the already existing pressure of overt and disguised unemployment that displaced cottage industries workers.

The best protection, of course, consists in keeping certain lines of production of consumer goods free from modern industrial competition by operating a selective system of investment and import controls. But such a policy is untenable in the long run, because of concerted pressures from consumers and industrialists. The former do not want to be deprived of the advantages—some real, others imaginary but nevertheless strongly believed in—of being catered to with modern industrial goods, mostly when they are cheaper than traditional goods (but this is not always the case). The latter use—and often misuse—the argument of competitiveness to claim access to a market which offers the easiest opportunities (in terms of the amount of capital required and degree of complexity of technology) of setting up modern industries; profits in such industries may run quite high if costs of production are considerably cheaper than in cottage industries, but prices are still governed by the costs of the latter.

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[25] The UNESCO conference on Application of Science and Technology to Asian Development, which met in New Delhi in August 1968, adopted a resolution to this effect (see UNESCO, Conférence sur l'Application de la science et de la technique au développement de l'Asie, Partie I: Conclusions et Recommandations, Paris, 1969, pp. 20-21).

[26] Such a suggestion is contained in a paper by Y. Nayudanma, Director of the Central Leather Research Institute in Madras, published in *Science and the Human Condition in India and Pakistan,* W. Morehouse, ed. (New York, Rockefeller University Press, 1965).

As to government intervention, while it could be reasonably effective with respect to import controls (although we are not too optimistic about their ability to prevent contraband altogether), applying controls to all private industrial investment, including small and medium plants, would require the setting-up of heavy and probably inefficient administrative machinery. At any rate, what we are discussing here is a somewhat theoretical case, as in practically all the developing countries the introduction of modern industries has started in lines of production that were directly competitive with the existing cottage industries.

The next best solution would be to operate a system of subsidies for the cottage industries financed out of special additional taxes imposed on competitive products manufactured by modern industries. This is actually the Indian practice as far as certain cotton textiles are concerned. This solution has three weaknesses, however. First, it has a negative effect on the consumers, who pay an additional indirect duty imposed on an item of mass consumption which should, on the contrary, be exempt from duties.[27] Secondly, paying subsidies to altogether inefficient industries makes little sense; the minimum productivity criterion (value added equal at least to a minimum wage) evoked in the context of intermediate technologies comes once more to the fore. Thirdly, it is to be feared that owners of workshops and cottage industries will try to compensate for the economic inefficiency of their establishments by exploiting their workers to the utmost limit; no amount of sound legislation is likely to be effective in conditions of acute competition for jobs.

Thus subsidizing of cottage industries should be made selective and, at the the same time, efforts should be made to rationalize them along intermediate technology lines. Data assembled for different Indian cottage industries point to an extraordinary diversity of economic performance, ranging from industries that are utterly uneconomic and undefendable, even on social grounds, to a few quite reasonable and prosperous ones (see table 1).

An altogether different solution would consist in integrating cottage industries into the industrial structure of the country through an elaborate pattern of collaboration with modern industries. The case of Japan and its articulated dualism is often quoted, though discussions on the subject lack some clarity, as cottage and small-scale modern industries[28] are altogether different things, especially when small-scale modern industries become so narrowly specialized that they can practically enjoy all the advantages of economies of scale while remaining a family business from the managerial point of view, as well as that of the capital necessary to start them. It might be useful to examine, at this stage, whether the Japanese experience really offers useful lessons for present-day developing countries.

(c) *Japan: a model for developing countries*?

We should start by pointing to four differences which sharply differentiate Japanese growth from that of the great majority of developing countries.

First, for the last hundred years Japanese development has been oriented by effective government action, even though appearances may suggest an economy with relatively few controls. As early as 1884, a bulky official study of economic conditions in Japan, *Kogyo Iken* (industrial proposal), set out targets for a ten-year time span, matching them with substantial policy recommendations. *Kogyo Iken* should be considered as the world's first development plan.[29]

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[27] The textbook preference for direct taxes and horror of indirect taxes should be opposed, as it is based on two wrong assumptions:

(*a*) Direct taxes are not equitable so long as the richer taxpayers can evade them while the poorer ones cannot;

(*b*) Indirect taxes may be equitable if they are not imposed on mass consumption goods but, instead, made strongly progressive when we get into the range of "unessentials" and "luxuries".

[28] See, for example, the important study of Dhar and Lydall, *The Role of Small Enterprises in Indian Economic Development* (Bombay 1961). See also Staley and Morse, *Modern Small Industry for Developing Countries* (New York, 1965) and Shigeru Ishikawa (see notes to table 1, p. 11).

[29] See Ichiro Inukai and A.R. Tussing, "*Kogyo Iken:* Japan's Ten Year Plan, 1884", *Economic Development and Cultural Change*, vol. 16, No. 1 (October 1967). The authors of the article quoted summarize the highlights of this document in the following way:

"A few of *Kogyo Iken's* points of special interest might be mentioned here. First, it reveals in remarkable clarity the impact of the first steps toward industrialization and westernization on the backward Japanese economy. The conflict between

(Continued on page 11)

Table 1

SELECTED INDEXES BY TECHNIQUES AFFECTING THE CHOICE OF TECHNIQUES IN COTTAGE INDUSTRIES: INDIA'S CASE

	Number of persons employed per unit of production	*Number of working days per person employed*	*Amount of fixed capital required per unit of production (rupees)*	*Annual earnings of unit of production (rupees)*	*Self-employment (SE) or wage employment (WE)*	*Cottage ratio (percentage)*
Rice milling						80
The *Pestle-and-mortar* method	2	150	10	131.4	SE	
The ordinary *Dhenki* method	2.5	150	40	183	SE	
The improved *Assam Dhenki* method	2	150	40	335.7	SE	
The *Chakki-Dhenki* method	5	150	355	432	WE	
Factory sector	53	195	57 552	16 802	WE	
Vegetable oil						80
The ordinary *Ghani* method	1.5	300	500	302	SE	
The improved *Ghani* method	1.5	300	650	764	SE	
Factory sector (ordinary)	55	195	138 020	56 530	WE	
Factory sector (hydrogenerated)	312	303	2 040 667	1 554 599	WE	
Sugar						70
The cottage Gur industry	4	100	513	120	WE	
The cottage *Khandsari* industry	4	100	2 125	9 902	WE	
Factory sector	804	138	3 024 923	1 350 925	WE	
Cotton yarn spinning (20's)						30
The ordinary *Charka* method	1	300	10	35.8	SE	
The *Ambar Charka* method	1	300	100	312.9	SE	
Factory sector	854	300	17 450 000	2 050 000	WE	
Cotton cloth weaving						85
The *Throw-Shuttle* handloom method	1.25	300	5	381.5	SE	
The *Fly-Shuttle* handloom method	1.25	300	40	576	SE	
The *Banaras* semi-automatic handloom method	1.5	300	200	1 920	SE	
The *Madanpura* semi-automatic pedal handloom method	1.5	300	250	2 880	SE	
Non-automatic power-loom in cottage sector	1.16	300	4 000	2 250	WE	
Non-automatic power-loom in a cottage mill	945	300	2 524 000	1 080 000	WE	
Tanning						90
As shown by *Aligarh* Survey	2	295	675	240	SE	
A village tanning centre	7	300	20 500	1 050	WE	
A centre proposed by the *Khadi* Board	20	300	20 000	45 540	WE	
Factory sector	99	315	111 350	68 650	WE	
Leather footwear						95
A cottage establishment	2.5	300	1 035	2 370	WE	
Factory sector (1960)	237	295	66 809	24 117	WE	
Paper						10
A cottage unit operated by bullock power reported by the *Khadi* Board	4	160	3 500	—660	SE	

Table 1 (*continued*)

SELECTED INDEXES BY TECHNIQUES AFFECTING THE CHOICE OF TECHNIQUES IN COTTAGE INDUSTRIES: INDIA'S CASE

	Number of persons employed per unit of production	*Number of working days per person employed*	*Amount of fixed capital required per unit of production (rupees)*	*Annual earnings of unit of production (rupees)*	*Self-employment (SE) or wage employment (WE)*	*Cottage ratio (percentage)*
A cottage unit operated by a 3 HP motor engine reported by the *Khadi* Board	4	160	4 100	—628	SE	
Factory sector	689	299	5 707 680	2 044 790	WE	
Matches						65
A *Karkhana* establishment as proposed by the *Khadi* Board	7.5	300	2 000	1 500	WE	
Factory sector	424	278	652 222	815 778	WE	
Soap						75
Prasad's personal inquiry	2	300	320	581	SE	
A *Karkhana* establishment as proposed by the *Khadi* Board	4	300	8 000	1 068.8	WE	
Factory sector	237	296	1 422 754	2 603 419	WE	

SOURCES: For the figures other than factory sector, Kodamath Prasad, "*Technological Choice under Development Planning. A case study in the small scale Industries of India*", Popular Prakashan, Bombay, 1963, pp. 45, 88-147; for factory sector, Government of India, *Census of Indian Manufactures, Fifth-Thirteenth* (1958), *Indian Textile Industry, Annual Statistical Digest, 1960*, and K. Prasad, op. cit. Government of India, *Annual Survey of Industries, 1960*, vol. I-XV.

Notes: Annual earnings of a unit of production calculated in the case of cottage establishments without counting the cost of family labour. In calculating the cost, it is assumed that the fixed and working capital is borrowed at an interest of 16 per cent per annum, which is higher than the rate prevailing in the factory sector. In the case of the factory sector, annual earnings are arrived at residually by subtracting wages and salaries from the gross value added; hence it corresponds to gross profit.

[Reproduced from Shigeru Ishikawa, *Economic Development in Asian Perspective* (Tokyo, Kinokuniya Bookstore, 1967), pp. 432-433.]

Secondly, it was largely autonomous in the sense that it depended only to a very small extent on inflows of foreign capital, while imports of know-how were made selective by means of a long-term policy; one could almost say that policies with respect to science and technology were the backbone of government development strategy. Although Japan's performance in foreign trade has always attracted a lot of attention, we should not forget that Japanese industrialization was strongly import-substituting, partly because of military con-

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(Continued from page 9)

modernization and the traditional cultural-economic legacy is a universal aspect of economic development; in the *Kogyo Iken* we get detailed insights into the manner in which these conflicts arose and into their social costs. Second, it was the *Kogyo Iken* which first defined the central role of the indigenous components of the national economy in modern economic growth in Japan and projected the growth of agricultural productivity within a traditional framework of small-scale farming. The *Kogyo Iken* explicitly raised the now fashionable controversy over 'balanced or unbalanced' growth; after considering the outcome of previous industrialization policies, it called for a shift in the emphasis of development efforts in favour of agriculture and rural industries. Third, the development programme outlined was one of self-help. The fact that Japan could not rely on foreign aid in the modern sense directed her to the maximum utilization of her comparative advantages, especially in the setting of export targets which would utilize the supply of the low-cost labour. Last, the role of the government in economic development was closely examined. In the present under-developed countries, there is a tremendous gap between the 'policy-maker's world of economy' and the 'people's world of economy'. Calculations which are rational to the economic planners are not necessarily rational to the people whose participation is crucial to the achievement of the plan. The over-all approach of the *Kogyo Iken* was one of consciously attempting to bridge this gap, an issue often neglected in present-day growth plans."

venience, partly because of acute shortage of foreign exchange.[30]

Thirdly, already at the beginning of the Meiji era Japan had developed an infrastructure and an educational system far more advanced than those existing at present in many developing countries. A modern public educational system was inaugurated in 1872 with an enrolment of 25 per cent of children of school age. Enrolment ratio increased to 95 per cent as early as 1905, and in 1907 six-year school attendance was made compulsory.[31] We believe Shigero Ishikawa, author of an important study on *Economic Development in Asian Perspective*,[32] is right when he insists on the contribution of this infrastructure to the success of Japanese agricultural policies and, at the same time, warns against the hopes of easy transplantation of Japanese labour-intensive methods of cultivation to other countries where such infrastructure (mostly in irrigation) and educational facilities may be lacking. We may add to this an efficient administrative machine—a rare phenomenon indeed, of invaluable importance to the development process.[33]

Fourthly, the war—and still more the post-war—performance of the Japanese economy, is characterized by a very low standard of popular consumption as compared to the national *per capita* income. Not only do savings run very high,[34] but the social distribution of income is uneven. Before the war Japanese peasants had been subjected to heavy exactions by the fiscal system, although the amount of public investment in agriculture should not be underestimated when describing the pattern of capital accumulation in that country.[35]

The Japanese economy now combines modern and efficient production with a consumption which is still low and traditional.[36]

To our knowledge no other society would accept such a pattern of growth, while, with imposed authoritarian solutions, there is a risk of getting the worst of both worlds: the evils of dictatorship and lack of dynamic development. We should not forget that the bulk of the Japanese population is now having substantial increases in its standards of living thanks to a combination of two factors: a very low point of departure and extraordinarily high rate of economic growth.

With these general remarks as a background, we may turn now to the more specific problem of industrial dualism. Its existence till a very recent date is attested by the data reproduced in table 2 pertaining to 1957.

According to Okita, about half of Japanese exports still come from small and medium-size enterprises, mostly specializing in labour-intensive products. Several small-scale industries work as subcontractors for large industries. From the managerial and technical point of view collaboration between small- and large-scale industries in Japan provides an example of unequalled efficiency. But we should not forget the important negative features of the system: the big gap in working conditions and wages between workers in the two industrial sectors, and the total dependence and subordination of many small-scale specialized industries to big companies which enjoy a monopoly position for their products. Moreover, commendable as it may seem at first sight, the Japanese pattern of industrial division of labour between large- and small-scale industries may prove ill-suited to the needs of developing countries precisely because of its heavy dependence on a highly developed infrastructure and managerial skills.[37]

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[30] Cf. the following remark by a leading Japanese economist: "In fact, it could even be said paradoxically that if foreign exchange had been more abundantly available in those early Meiji years Japan might have depended longer upon foreign supplies for many of the capital goods required in the development stage. As it was, the very fact of limitation in foreign exchange earnings, combined with the inflow of cheap consumer goods which could not be prevented under the circumstances, helped strengthen the psychological attitude of what is sometimes called reactive nationalism and could be said to have hastened the development of capital goods industries at home". Shigeto Tsum, "An Aspect of Japan's Economic Development. The Rise of Capitalism and the Role of Agriculture", in *The Structure and Development in Asian Economies*, The Japan Economic Research Centre, December 1968, p.22.

[31] M. Hiratsouka, "L'enseignement au Japon", *Le Courrier de l'UNESCO*, (Sept-Oct. 1968), pp. 19-24.

[32] This book, issued under the auspices of the Institute of Economic Research, Hitotsubashi University, was published in Tokyo in 1967.

[33] See Kato Shuichi, "Le Japon: Pays de Contrastes", *Les Temps Modernes* (February 1969), pp. 1348-9 for some interesting remarks on "occidentalization" based on public institutions and the bureaucratically minded Japanese *élites*.

[34] Gross savings in 1964 reached 37.4 per cent of the gross national product.

[35] See Ishikawa, op. cit., chapter 4, pp. 290-356.

[36] See for a general description of the Japanese economy Saburo Okita, "La Croissance Rapide du Japon d'après-guerre", *Analyse et Prévision*, No. V, (1968), pp. 1-28.

[37] Compare the following observations of W. Paul Strassman (*Technological Change and Economic Development*, Ithaca, New York, Cornell University Press, 1965, p. 168): "As important as the choice of technique, however, is the modern setting in which small-scale Japanese industry moves. Electric power

Table 2

CAPITAL-INTENSITY AND WAGE LEVEL IN JAPANESE INDUSTRY, 1957

Size of enterprise (number of workers)		*Ratio of gross output to fixed capital*	*Fixed capital per worker (thousands of yen)*	*Labour productivity (2 x 3)*	*Ratio of gross profit to fixed capital*	*Gross profit per worker (thousands of yen) (3 x 5)*	*Wage per worker (4 – 6)*
1		*2*	*3*	*4*	*5*	*6*	*7*
1	3	0.139	93	13	0.043	4	9
4	9	0.186	97	18	0.082	8	10
10	19	0.256	90	23	0.133	12	11
20	29	0.269	97	26	0.144	14	12
30	49	0.284	102	29	0.167	17	12
50	99	0.258	136	35	0.162	22	13
100	199	0.221	186	41	0.145	27	14
200	299	0.202	233	47	0.133	31	16
300	499	0.168	345	58	0.119	41	17
500	999	0.146	447	65	0.103	46	19
1000	& +	0.100	769	77	0.068	52	25
TOTAL		*0.133*	*324*	*43*	*0.083*	*27*	*16*

We should not like to end this digression on Japan's experience without insisting once more on the fundamental role which was ascribed in its strategy of growth to a deliberate government policy of acquiring foreign science and technology in such a way as to avoid costly and unnecessary duplication of technological imports, to channel the flow of foreign technology to a few critical areas of the economy and to combine selective imports with domestic research aimed at assimilating, developing and frequently improving the imported know-how.[38] This experience of Japan has been recently contrasted by Indian scientists with that of India. Criticism is being levelled at unnecessary foreign collaboration agreements which do not really add new elements to the know-how already existing in the country but are bound to aggravate the balance-of-payments problems; such collaboration agreements would seem to be motivated either by the desire of Indian industrialists to produce under the cover of some attractive foreign trade mark or by the pressures of exporters of equipment and know-how made possible by means of the mechanism of doubly tied foreign assistance. On the other hand, the existing research and equipment-making capacities in such important fields as the fertilizer and machinery and equipment industries are at present severely underutilized, partly because of the pressure of foreign vested interests.[39]

4. *Three notes on the toolbox*

We do not intend to proceed in this section to a review of the various techniques recommended for the selection of techniques. This

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is cheap; the transportation network is good; and access to auxiliary services, such as sizing, dyeing, mercerizing, electroplating, and case hardening, is convenient. Efficient, above all, are the dependable interrelations among contracting, subcontracting, and sub-subcontracting firms and the meeting of quality standards and of delivery schedules. Perhaps this disciplined coordination is a unique survival of a pre-industrial hierarchical social pattern, the *oyabun-kibun*, or 'boss-henchman' system with its deeply conditioned feelings of mutual obligation. It is worth nothing, too, that modern subcontracting and the great rise of Japanese small enterprises (in contrast with dwarfs employing five or less) came *after* the mid-1920's. Perhaps that crucial dependability was in part a product of industrialization, of what Veblen called the cultural incidence of the machine process.

"Premature copying of labour-intensive, small-scale subcontracting may therefore not be as efficient around the Caribbean Sea and the Indian Ocean as in Japan. Backward economies lack managerial skill and reliability more than capital."

[38] See Okita, op.cit., and also the study on the transfer of technologies by C. H. G. Oldham, C. Freeman and E. Turkcan (UNCTAD, document TD/28/Supp. 1, 1 November 1967).

[39] See M. M. Suri, "Impact of Foreign Collaboration on Indian Research and Development" (address delivered by the then director of Central Mechanical Engineering Research Institute in Durgapur before the Association of Scientific Workers of India on April 13, 1968) and also the interview granted to the *Hindustan Times Weekly* on February 16, 1969. See also K. R. Chakravorty "Scientists and National Development" (Lecture by the Manager, Planning and Development Division, The Fertilizer Corporation of India Ltd.). We reproduce in annex I a substantial part of M. M. Suri's address referred to above.

has become a subject for textbooks and, besides, UNIDO has issued a number of useful papers on the subject.[40] We shall confine ourselves to a brief comment on the common substratum of such techniques, their applicability and their limitations. The other two notes contain suggestions for further work, which might perhaps prove useful.

(a) *Social cost-benefit analysis: advantages and limitations*

Social cost-benefit analysis is a tool by means of which project makers are expected to harmonize their individual projects with the national objectives set forth in the national development plan, which in turn may be modified as a result of knowledge acquired in the process of project making.

Thus social cost-benefit analysis differs from the traditional commercial profitability analysis in its aims and criteria of evaluation, as it takes into account the different goals of the plan and some external effects of the investment, including those operating outside the market, while commercial analysis is centred on profitability alone.

A practical way of incorporating the evaluation criteria used in social cost-benefit analysis of the macro-economic preferences consists in using shadow or accounting prices instead of market prices for capital, foreign exchange and occasionally labour[41] and social rates of discount of future costs and benefits. The different objectives incorporated in the national plans may be, furthermore, given different weights, as suggested by an influential school of thought led by Jan Tinbergen.[42]

But the choice of shadow prices, discount rates and relative weights assigned to the different goals embodied in the plan involves the exercise of discretion and reflects necessarily political value judgments. Are policy makers really capable of making their choices in a rather abstract manner consisting in setting values for the parameters mentioned above, or should they be given an opportunity for a more explicit discussion of the alternatives, in particular of the fundamental choice between "more jam to-day and more jam to-morrow" to use Joan Robinson's words?[43] We are not convinced by the argument that an explicit quantified hypothesis is better than none at all, unless one postulates the use of sophisticated simulation techniques with different alternative sets of prices.

Is it at all possible to build a homogeneous goal function by means of attributing weights to different and frequently conflicting goals, or would it be a better, though less ambitious, alternative to choose maximization of consumption in a given time horizon, subject to constraints with respect to the relative share of investment in, and social distribution of, income? In the latter approach, employment objectives could be taken care of by means of the adequate selection of techniques at the project level and other possible goals kept in mind during the long process of successive adjustment of the plan.

As for the determination of shadow prices, it is often assumed that they should be "equilibrium prices". But, even if we disregard the difficulty of computing such prices,[44] do equilibrium prices really have normative significance? Myrdal's criticism of Tinbergen on this point seems very well taken[45] and the following conclusion of his argument, though written in the context of South Asia, has a wider application: "It cannot be denied that speculation in terms of accounting prices or shadow prices relates to real and important problems raised by the attempts to plan for development in the underdeveloped countries in South Asia. Most certainly there is, for instance, a vast underutilization of the labor force in agriculture and elsewhere in the economies of the region; similarly, in the organized sector there is a greater scarcity of capital, and particularly foreign exchange, than is indicated by their prices. . . These facts and policy inferences should be taken into account when deciding on institutional reforms and prices policies and other operational controls. Planning should reflect the political choices of the planners and, behind them, the governments and it should be founded on as much factual knowledge as is attainable, including that pertaining to the responses of people to prices and price changes. The abstract and metaphysical concept of accounting prices cannot help to solve the theoretical and practical problems facing South Asian planners. It stands out as a typical example of the pseudo-knowledge, given a learned and occasionally mathematical form, that unfortunately has formed a major part of the contribution of Western economics to the important tasks of ascertaining the facts in under-developed countries and creating a framework for policies designed to engender and direct development" (p. 2039).

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[40] We refer in particular to papers by A. K. Sen, S. Marglin, F. Weisskopf and K. Laski.

[41] As the planner is primarily interested in changing the substitution rate between capital and labour it is not necessary to manipulate both the prices at the same time to get the desired proportion.

[42] For a brief exposition of the logic of social cost-benefit analysis see annex II.

[43] Joan Robinson, *Economic Philosophy* (London, 1962).

[44] Every change in the economic situation or in the plan goals requires a new round on the computer.

[45] See Gunnar Myrdal, op.cit., vol. III, appendix 5, pp. 2031-2039.

The doubts and criticisms raised above should not invalidate the social cost-benefit analysis but rather point to its limitations and indicate that it should not serve as the only basis for decision about the advisability of making an investment.[46] Such a decision should be taken on other grounds in the course of the planning process. The social cost-benefit analysis steps in as a tool for "variant thinking" and comparing alternative designs and technologies with a view to choosing at the project level solutions that are, in a first approximation, optional from the macro-economic point of view. Reduced to this dimension, it does not differ, except for some technicalities, from the methods of analysis of the "effectiveness of investment" used in centrally planned economies.

Even though we have played down the role of social cost-benefit analysis and its applicability does not extend beyond public investment and, to some extent, private projects subject to screening and licensing by the State, we consider that its systematic application could bring about substantial improvements in the realm of the actual selection of techniques.

(b) *Complicating the selection of techniques*

At this stage it might be useful to introduce two complications.

One is relatively easy to handle once it is realized. In fact, a project often implies several independent choices of technologies and it may be opportune to have asynchronic technologies and equipment of different vintages and capital-intensity inside the same factory (e.g. the selection of an up-to-date highly automated technology for the basic process does not, in itself, preclude the retention of traditional techniques for packing and internal transport, as well as for management and trading).

The other is a more fundamental one. We have hitherto assumed, for the sake of simplicity, that a technology is a two-dimensional vector characterized by outlays of capital and labour. But neither of these two factors is homogeneous, and it might be tempting, therefore, to describe technologies as *n*-dimensional vectors, introducing explicitly such factors as foreign exchange, skills, scarce raw materials and, with respect to agriculture, land.

The set of efficient technologies described in this way will consist of all technologies which differ from a standard one at least by one lower and one higher input.[47]

How can a selection be made under these conditions? Two approaches are possible.

One leads us back to the use of accounting prices. Subject to their adequacy, optimal solutions can be found.

The other is more pedestrian and does not lead to optimal solutions, but it has the advantage of retaining for further analysis projects which are for some reason outstanding. It consists in successively ranking all the technologies according to each criterion and picking up for further consideration those which either rank very high with respect to one criterion, or rank high with respect to several criteria. Such a procedure might eventually lead to redesigning of a syncretic solution. Of course such an approach makes sense only if several alternatives are possible. But in compensation its applicability extends beyond the selection of techniques proper. When developed, it might become a subsidiary tool for investment decision-making, i.e., the area which escapes the social cost-benefit analysis.

(c) *A suggestion for the classification of agricultural technologies*

A three-factor analysis on the lines suggested above is attempted below with respect to agricultural techniques in order to overcome the lack of precision attached to expressions like "intensive" and "extensive" agriculture.

Let there be a standard technique T with average inputs of land, capital and labour per unit of output. We shall distinguish six types of techniques, all of them efficient, differing from T by factor proportions.[48] (See table 3.)

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[46] Except perhaps for foreign-trade oriented projects, which are all directly comparable as foreign-exchange yielding or saving.

[47] If they only differ by higher inputs, they are inefficient. If they only differ by lower inputs, this means that the standard technique is not efficient and should be discarded.

[48] The exercise could be usefully complicated by

Table 3

TYPES OF AGRICULTURAL TECHNIQUES

	Land	*Capital*	*Labour*	*Denomination*
1.	>	—	—	Land-extensive
2.	>	>	—	Labour-saving
3.	>	—	>	Capital-saving
4.	—	—	>	Labour-intensive
5.	—	>	>	Land-saving
6.	—	>	—	Capital-intensive

Instances of each of the six techniques and of their applicability are summarized in table 4.

No doubt actual choices become much more complicated, as agricultural production functions require certain combinations of inputs and accurate time-scheduling of operations. In these circumstances combinations of different techniques may be required. Thus, for instance, capital-intensive irrigation[49] and labour-displacing mechanization of certain operations may be a precondition for passing from one low-yield to two high-yield labour absorbing crops per year. Moreover, as can be seen from table 2, certain types of technology are only possible for given outputs, so that the real choice is between different output-mixes subject to the principle of substitutability.[50]

To the best of our knowledge, little systematic work on these subjects has up to now been made available to planners in spite of their practical relevance to the developing countries. According to the case, expansion of agricultural output by means of land-extensive, capital-saving or land-saving methods should provide a substantial number of additional jobs, while at the same time generating more demand for industrial inputs and consumer goods and, therefore, more employment in the industrial sector. This presupposes however, that research work on capital-saving and labour-absorbing technologies and crops in agriculture should be given a high priority, a priority which, unfortunately, it has not been given, at least in Latin America.

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introducing the distinction between investment capital and working capital.

[49] Assuming that it cannot be entirely done by labour-intensive methods,

[50] The range of substitutions becomes, of course, very broad when we introduce foreign trade into the picture.

Table 4

AGRICULTURAL TECHNIQUES AND THEIR APPLICABILITY

Denomination	*Examples*	*Applicability*
1. Land-extensive	Cattle breeding on natural pasture lands.	Very favourable land-man ratio.
2. Labour-saving	Mechanized agriculture with relatively low yields per hectare (maximization of output per man).	Favourable land-man ratio; shortage and/or expensiveness of labour.
3. Capital saving	Settlement of virgin land with little equipment	Favourable land-man ratio; strong demographic pressure; shortage of capital.
4. Labour-intensive	Intensive agriculture with small inputs (maximization of active agricultural population per hectare).	Unfavourable land-man ratio; strong demographic pressure; shortage of capital.
5. Land-saving	Intensive agriculture with more inputs (maximization of yield per hectare).	Same natural and demographic conditions as in 4; more availability of capital (higher stage of development than 4).
6. Capital-intensive ...	Industrialized agriculture (maximization of both yield per hectare and productivity per man).	Unfavourable land-man ratio; shortage and/or expensiveness of labour.

1. *Urbanization, industrialization and employment*

The magnitude of the employment problem faced by Latin America is summarized in the following estimate: in 1960 the equivalent of 25.7 per cent of the active population, i.e., about seventy million persons, were unemployed.[51] The demographic explosion is of course responsible for aggravating the employment situation but deep reasons should be sought in the socio-economic structure and in the specific features of the recent industrialization processes.

The former account for the severe underutilization of land and natural resources and the consequent migratory push of rural population towards urban areas. The latter explain that there has been surprisingly little change in the employment structure as a result of the rapid growth of industries. A few data will illustrate these points.

According to data produced by Z. Slawinski (table 5), the relative share of manufacturing employment decreased from 13.7 to 13.4 per cent of the active population between 1925 and 1960. These figures conceal, it is true, a sharp decrease of employment in cottage industries and artisan-type workshops—from 10.2 to 6.8 per cent—and a strong increase in the share of organized modern industries from 3.5 to 7.5 per cent. We should note, however, that the additional jobs in modern industries were not being generated quickly enough to offset the decrease of employment in cottage industries.[52]

Moreover, in spite of the spectacular progress in industrial output which accounts by now for about one quarter of the continent's gross national product, only twenty-five out of every thousand Latin Americans were employed in industry in 1960. Hence the pessimistic but reasonable assumption made by Z. Slawinski that, from 1965 to 1975, industry could not absorb more than 14 per cent of additional labour, as compared with about 13 per cent for construction.

Most recent data covering the period up to 1965 confirm the continuation of the trend so exhaustively analysed by Slawinski. Thus Mr. Felipe Herrera, president of Inter-American Development Bank, quoted the following figures in a speech: from 1950 to 1965 the urban share[53] of the active population rose from 44.8 to 53.3 per cent but at the same time the share of those employed in manufacturing industries decreased from 14.2 to 13.8 per cent. At the same time, employment in construction and utilities increased from 7.8 to 9.1 per cent, while the most considerable increase in employment took place in "other services", public administration and non-specified activities (from 22.8 to 30.3 per cent).[54] Some people argue that such an increase in tertiary employment is a positive feature characteristic of modern industrial development and a kind of "employment multiplier effect" generated by industrialization. This seems to be, unfortunately, a much too optimistic interpretation as far as Latin America is concerned. Mr. Herrera formulates the right diagnosis when he insists on the fact that the increase of employment in services has contributed to the gross national products, but only insignificantly, and links the migratory movements from countryside to town with the unsatisfactory social situation of the rural population.

Hence the problem of marginal population which besets Latin American urban development and reflects the incapacity of the industrial sector to react more dynamically to the growing pressure for jobs.

We might, at this point, observe that the appalling poverty of an important section of the rural population affects the situation in two ways. On the one hand, it sets people on the road to the towns, on the other, it reduces the outlets for industrial production. The ILPES study already quoted gives 40 per cent of Latin America's population, that is, roughly a hundred million people, as living below their vital minimum calculated at 90 dollars per year and spending about 89 dollars per family per month. These people practically do not purchase any industrial goods. The extreme inequality of social income distribution in Latin America is shown in table 6. In a sense, this problem of the maldistribution of national income is

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[51] ILPES "Elementos para la elaboración de una política de desarrollo con integración para América Latina" Santiago, 1968 (mimeographed), p. II.1.

[52] We are speaking of relative shares and not of absolute figures. The total number of employed people did increase substantially during the thirty-five years under discussion. But the increase in employment was slower than the population growth rate and the active population decreased from 35 per cent to 33.1 per cent of total population.

[53] Population is increasing in Latin America by about 3 per cent per year but urban population is growing at 4 per cent per year, and in many towns at even 6 per cent per year.

[54] Speech delivered at the tenth Assembly of Bank Governors. Guatemala City, April 22, 1969.

Table 5

LATIN AMERICA: DISTRIBUTION OF ACTIVE POPULATION BY ECONOMIC SECTORS AND AS PERCENTAGE OF TOTAL POPULATION, 1925 TO 1960

	Distribution of active population				*Active population as a percentage of total population*			
	1925	*1950*	*1955*	*1960*	*1925*	*1950*	*1955*	*1960*
Total	100.0	100.0	100.0	100.0	35.0	34.0	33.6	33.1
A. Agricultural sector	61.3	53.1	50.0	47.3	21.5	18.1	16.8	15.7
B. Non-agricultural sector	38.7	46.9	50.0	52.7	13.5	15.9	16.8	17.4
1. Production of goods and basic services	19.5	23.4	24.6	25.4	6.8	8.0	8.3	8.4
(*a*) Mining	1.0	1.1	1.1	1.0	0.3	0.4	0.4	0.3
(*b*) Manufacturing	13.7	14.4	14.3	13.4	4.8	4.9	4.8	4.8
(i) Industrial sector	3.5	6.9	7.1	7.5	1.2	2.3	2.4	2.5
(ii) Cottage industries sector	10.2	7.5	7.2	6.8	3.6	2.6	2.4	2.3
(*c*) Construction	1.6	3.7	4.5	4.9	0.6	1.3	1.5	1.6
(*d*) Basic services	3.2	4.2	4.7	5.2	1.1	1.4	1.6	1.7
2. Services	19.2	29.5	25.4	27.3	6.7	7.9	8.5	9.0
(*a*) Trade and finance	6.7	7.9	8.6	9.2	2.3	2.7	2.9	3.0
(*b*) Public administration	2.2	3.3	3.5	3.7	0.8	1.1	1.2	1.2
(*c*) Miscellaneous	7.9	9.9	11.0	12.1	2.8	3.3	3.7	4.0
(*d*) Not specified	2.4	2.4	2.3	2.3	0.8	0.8	0.8	0.8

SOURCE: OCDE. *La structure de la main-d'œuvre en Amérique Latine, son évolution au cours des dernières décennies et ses perspectives à long terme. Problèmes de Planification des ressources humaines en Amérique Latine et dans le projet régional méditerranéen, Paris 1967. Travaux du séminaire tenu à Lima en mars 1965 et documents complémentaires*, p. 182.

Table 6

LATIN AMERICA: ESTIMATED INCOME DISTRIBUTION, 1960

Income bracket (deciles)	*Share of total personal income (percentage)*	*Average of personal income as a percentage of the general average*	*Annual* per capita *income (dollars)*	*Monthly average income per family*
1st	2.1	20	80	40
2nd	2.8	28	110	50
3rd	3.6	35	140	60
4th	4.3	43	170	80
5th	5.4	55	220	100
6th	6.5	65	260	120
7th	8.1	80	320	150
8th	10.7	108	430	200
9th	15.4	155	620	280
10th	41.1	410	1 640	750

SOURCE: "Elementos para la elaboración de una política de desarrollo con integración para América Latina". Document prepared by ILPES and CELADE, Santiago, Chile, July 1968, chap. III, p. 11.

so pre-eminent as to make some Latin American economists (e.g., Celso Furtado) believe that it becomes immaterial to discuss such matters as selection of technologies, which are of minor importance as compared with the possible effects on employment of reasonable income policies. While agreeing that income policies should be given priority in all discussions on development strategy for Latin America, we consider, however, that the urgency of the employment problem, as illustrated above, makes it necessary to explore all the possible avenues including that of improving the selection of techniques.

In saying this, we do not want to give the impression that much can be achieved, particularly with respect to industrial employment. The experience of other under-developed countries is not very encouraging.

A study on West Bengal shows that substantial industrial development in terms of capital outlay and additions to productive capacity may conceivably continue for several decades with little or no additional labour engaged in manufacture. Colin Clark's criterion—conceiving development statistically as a shift of the percentage distribution in the labour force from agriculture towards industry and services—is not a good indicator therefore for the developing countries.[55] Data assembled by C. Hsieh[56] point to the same phenomenon of employment growth rates lagging behind those of output, particularly in manufacturing industries. The situation seems much better in construction. As to agriculture, the range of expectations is extremely wide because some plans attach a great importance to labour-intensive methods of agricultural development while others, for good or bad reasons, insist on mechanization (see table 7).

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[55] "In point of fact, India's current development is taking place in a manner quite different from that which characterized the industrial growth of Western Europe and North America, and in a quite different setting, India as a late-comer to the process of industrialization can take advantage of the scientific and technological progress of Europe. Productivity per worker in recently installed manufacturing units in India is, accordingly, very much greater than was possible one hundred and fifty years ago in the early stages of the industrial revolution. There are also important differences of scale. For example, the population of India today exceeds by more than forty times that of England and Wales in 1800.

"What we must realize is that the economic trends of the nineteenth century in Western Europe and North America are no longer adequate guides to the path lying before India in the 1970's, 80's and 90's. Technological developments in production seem to render obsolete our standards for evaluating the significance of changes of working force distribution. We shall have to work out new criteria valid for the age of automation.

"As the development in West Bengal has demonstrated, India is well started along the road to becoming a strong industrial power, and shows many signs of continuing in this direction. But from 1961 onward, India's progress toward modernization is unlikely to be reflected in a sizeable increase in the percentage of workers engaged in manufacture."

Alice and Daniel Thorner, "The twentieth century trend in employment in manufacture in India—as illustrated by the case of West Bengal", in *Essays on econometrics and planning presented to Prof. P. C. Mahalanobis* (Oxford, 1964), p. 305.

[56] "*Les taux d'augmentation d'emploi dans les plans de développement*", *Revue Internationale du Travail*, No. 1, 1968.

Finally we might point to the big intersectorial disparities in labour productivity, which so dramatically emphasize the dualistic industrial structure of Latin America. According to data produced by ECLA, in 1962, gross output per worker in Latin America (excluding Cuba) averaged 1,092 dollars. But this average conceals sectoral differences ranging from 353 dollars in artisan-type production and 511 dollars in agriculture, to 3,001 dollars in modern industry, and as much as 5,443 in extractive industries.[57] We should furthermore note that the range of productivity inside each sector is also very wide. The general trend for the productivity gaps is to increase with time. Thus modern capital-intensive industries continue to develop as *enclaves*; the "spill-over" effect of their high productivity is not very substantial. Slawinski summarized the situation by saying that while 11 per cent of the population belongs to the high productivity bracket which is comparable to the average for Western Europe, as much as 40 per cent of the population has not as yet gone much beyond the poorest South Asian standard.[58]

One conclusion which clearly emerges from these data is the need for a concerted attack. While efforts should be made to avoid unnecessarily high capital-intensity in the modern industrial sector, the bulk of additional jobs will have to be provided for quite a time by the low-productivity sectors, where minimum productivity standards should, however, be enforced through a process of rationalization.

2. *Inadequate supply of technologies*

A major reason for the abuse of highly capital-intensive techniques in the modern sector lies in the inadequate supply of alternative technologies.[59] We cannot really blame entrepreneurs for making wrong choices when they have no opportunity for choice at all.

Such a situation is normal for quite a considerable range of modern industries where the only technology available (at least for the basic manufacturing process, if not for all the stages of production and commercialization) is highly capital-intensive. But in many other fields it should be possible to choose from a wide spectrum of efficient techniques of different vintages; such techniques must, however, be made accessible, but the present organization of the technological market in Latin America makes this exceedingly difficult. It is a highly imperfect seller's market dominated by dealers in equipment, and foreign consultants, and subject to pressures from powerful vested interests which in their advertising and propaganda skilfully play up such arguments as the need of catching up with the most up-to-date solutions abroad and becoming competitive.

Moreover, a substantial part of the transfer of know-how in manufacturing industries takes the form of direct foreign investment or collaboration agreements between foreign and local private capitalists. Neither such transfers nor the organization and working of the technological market in Latin America have been sufficiently well studied. The scattered information available is, however, enough to reach alarming conclusions.[60]

The duplication and wasteful transfer of technologies that are well known and have long been mastered is a common practice. Unsuitable technologies are frequently sold at exorbitant prices, as the purchaser has no choice left. Second-hand equipment, which could be profitably absorbed, is being offered at prices which make it a bad bargain while inflating the value of the capital investment of foreign subsidiaries, which get it from their mother companies.[61] The continued pressure of foreign and local vested interests may be very strong indeed, strong enough to prevent even the adequate utilization of the capabilities already existing in the Latin American countries. The recent experience of the Indian fertilizer industry described in annex III recalls

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[57] The latter figure goes down to 2,610 dollars if Venezuela is excluded.

[58] Op. cit., p. 218

[59] The bias towards capital-intensive techniques resulting from inadequate industrial policies will be examined in the next section.

[60] We are only dealing here with one particular aspect of direct foreign private investment. Its disastrous effects on the Latin American balance of payments are only too well known. It will be sufficient to recall here that the ratio of expatriation of profits to new direct United States investment in Latin America, as computed by the First National Bank and quoted in *Le Monde* on March 4, 1969, are as follows:

	1965	*1966*	*1967*	*1968*
Latin America	4.0	4.3	7.0	5.0
World	1.4	1.4	1.9	2.0

[61] P. Strassman, op.cit, denies that such practices take place on a large scale. But he produces scanty evidence to support his view.

Table 7

PLANNED OR PROJECTED ANNUAL COMPOUND RATES OF GROWTH OF OUTPUT IN EMPLOYMENT BY SECTORS

Plan	Total			Agriculture			Industries			Construction			Other sectors		
	Ro	*Rn*	*Rn/Ro*	*Ro*	*Rn*	*Rn/Ro*	*Ro*	*Rn*	*Rn/Ro*	*Ro*	*Rn*	*Rn/Ro*	*Ro*	*Rn*	*Rn/Ro*
Mal. II (1961-65)	4.1	2.83	0.70	2.83	2.11	0.75	6.34	3.19	0.50	12.35	11.84	0.96	3.40	2.50	0.74
U.A.R. II (1960-65)	7.4	4.90	0.66	4.06	3.17	0.77	8.16	4.44	0.54	8.01	6.81	0.86	8.88	7.85	0.89
Mal. 20/I (1966-70)	4.9	2.80	0.57	4.00	2.30	0.58	4.10	2.90	0.71	8.50	3.70	0.43	4.90	3.60	0.72
Pak. II (1960-65)	3.7	2.11	0.57	2.65	1.92	0.72	7.71	4.40	0.57	—	8.45	—	3.71	1.64	0.44
Ven. (1963-66)	8.0	4.60	0.57	8.00	0.60	0.75	13.50	5.80	0.43	14.80	18.10	1.20	6.60	5.50	0.83
							4.30	3.30	0.77						
Ceyl. (1959-68)	6.0	3.17	0.53	4.72	1.82	0.39	12.10	5.60	0.46	12.15	10.50	0.85	4.54	3.63	0.80
Pak. III (1965-70)	6.5	3.45	0.53	5.06	2.47	0.49	9.99	5.22	0.52	—	—	—	7.11	3.37	0.72
Phil. (1963-67)	5.8	3.00	0.52	3.00	—0.42	0.14	10.01	10.07	1.07	9.35	5.03	0.54	5.24	5.35	1.04
U.A.R. (1960-65)	7.2	3.19	0.46	5.06	3.17	0.63	14.50	6.03	0.41	—0.40	—1.17	—3.00	4.40	2.67	0.60
Ghana (1963-70)	5.5	2.52	0.46	5.15	0.97	0.19	7.60	6.46	0.85	—	—	—	3.70	3.90	1.06
Tur. I (1963-67)	7.0	3.10	0.45	4.20	1.36	0.32	12.60	6.03	0.50	—	10.67	—	7.27	8.88	1.22
Tun. (1962-71)	6.4	2.58	0.40	3.66	1.84	0.50	8.79	4.61	0.52	10.40	0	—	6.79	5.70	0.84
Tur. II (1968-72)	7.0	2.65	0.38	—	0.59	—	—	4.04	—	—	9.03	—	—	7.57	—
Tur. III (1973-77)	7.0	2.65	0.38	—	0.50	—	—	3.71	—	—	7.11	—	—	6.81	—
Grè. I (1960-64)	6.0	1.92	0.32	3.54	0	0	8.01	3.19	0.40	—	—	—	6.60	3.54	0.54
Mar. (1960-64)	6.2	1.61	0.26	3.37	—	—	8.74	—	—	16.20	—	—	5.55	—	—
Inde II (1956-61)	4.6	1.17	0.26	3.37	0.36	0.11	8.16	2.11	0.26	6.03	6.81	1.13	4.23	2.83	0.66
Inde III (1961-66)	6.0	1.55	0.26	4.56	0.69	0.15	12.72	2.20	0.17	—	15.43	—	5.71	4.06	0.65
It. (1955-64)	5.0	1.23	0.25	1.84	—1.14	0.62	6.17	2.74	0.44	—	8.20	—	5.70	2.74	0.48
Grè. II (1965-69)	5.5	1.36	0.25	3.89	0	0	7.11	2.47	0.35	—	—	—	5.50	2.29	0.42
Jap. 5 (1958-62)	5.8	1.37	0.24	2.92	—0.80	0.27	6.32	2.10	0.33	—	—	—	6.42	2.36	0.37
Jap. 10 (1961-70)	7.8	1.24	0.16	2.80	—2.04	0.71	9.00	3.50	0.39	—	—	—	8.40	2.90	0.35

Ro = Annual compound projected rates of increase of the output.
Rn = Annual projected rates of the increase in employment.

the situation which prevailed in Brazil with respect to the oil industry in the early fifties, when Petrobras was in its early stages.

The lack of a solid research and development infrastructure works in the same direction. A UNESCO study on research and development in twenty-five developing countries gives Argentina as having the highest expenditure per head: 2.8 dollars per year, as compared with an average of 0.45 dollars for the twenty-five countries covered and about 60 dollars for the five most developed Western industrial powers.[62]

The bulk of funds is allocated to basic research, as is attested by the examples of Mexico[63] and Venezuela, where in 1963 about 74 per cent of research was basic, 21.5 per cent applied, and only 4.4 per cent went to development.[64]

Foreign-owned industries cannot be expected to foster technological research in the Latin American countries, unless they are forced to it by adequate legislation or induced at some future time to shift part of their central research laboratories because of the lower cost of research.[65]

The bulk of the effort should be national and probably government sponsored,[66] but fiscal incentives and legal measures should be provided at the same time to compel private industrialists to support and utilize technological research[67] to a much greater extent than hitherto.[68]

Four particularly negative consequences of the present situation with respect to research should be mentioned here.

First, together with political instability, it accounts for the alarming proportions of the brain drain, both external and internal (from science and technology to administrative and commercial careers).

Secondly, it leaves an unnecessarily large area of the economy for which at present no efficient technologies exist at all because the difference in national endowments, ecological and social conditions makes transfer of technology either impossible or unlikely, as no scientists abroad happen to be working on such problems, and the priorities for research in developed countries do not coincide at all with those of developing countries. Here once more we should recall the need of the low-productivity sectors for efficient techniques in the low range of capital intensity.

Thirdly, lack of reasonable research facilities and experience makes a rational, selective policy of imports of know-how practically impossible.

Lastly, imports of technology which are not being absorbed into the stream of local research and followed up by modernization and improvements lead to the creation of "sectoral and spatial enclaves",[69] which, furthermore, after some years of technological standstill lose all the glamour of their "up-to-dateness". This technological immobilism accounts, perhaps to a still greater extent than the insufficiency of equipment-producing industries, for the Latin American economy's lack of capacity to reproduce itself, pointed out by S. Dell in his analysis of its vulnerability with respect to foreign trade.[70]

3. *A critique of industrial policies*

However narrow the range of choices may be, it is not being adequately utilized because of the capital-intensive bias inherent to present industrial policies in Latin America.

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[62] Data communicated to the participants of a UNESCO seminar in December 1968. This figure should be read in conjunction with the following data available for Pakistan: expenditure on foreign consultants exceeds 1 per cent of the national income, while research gets less than 0.2 per cent. Nuclear energy is getting ten times as much money as research on jute and fisheries—two basic industries for the country. M. U. Hag "Wasted Investment in Scientific Research", in *Science and the Human Condition in India and Pakistan* (New York, 1965), pp. 126-132.

[63] See V. L. Urquidi, A. L. Vargas, *Educación superior, ciencia y tecnología en el desarrollo económico de México* (Mexico, 1967).

[64] Data quoted by Marcel Roche at the Second Meeting of Directors of National Councils of Research in Latin America, held under the auspices of UNESCO in Caracas on December 1968.

[65] Though this point may seem at present far-fetched it should not be overlooked. In many fields research is essentially labour-intensive and, once skilled personnel becomes available, developing countries should have a comparative advantage over high-living-cost countries.

[66] See, for example, O. J. Maggiolo, "Política de Desarrollo Científico y Tecnológico de América Latina", in *Gaceta de la Universidad* (México), March/April 1968. See also J. Leite Lopes, "La science, le développement économique et le tiers monde", *Le monde scientifique*, No. 3, 1968.

[67] See Leite Lopes, op. cit.

[68] Lack of interest in research on the part of powerful industries that are considered "progressive" is clearly evidenced by the series of lectures published in São Paulo in 1968 in a volume entitled *Pesquisa tecnológica na universidade e na indústria brasileiras.*

[69] See Manuel Balboa's speech at 1965 CASTALA in Santiago.

[70] S. Dell, "The need for economic integration among underdeveloped countries (with special reference to Latin America)" in *Reshaping the World Economy*, op. cit., pp. 164-176.

In matter of fact, in order to foster an industrialization chiefly hampered, as it was believed, by lack of capital, excessive fiscal, credit and foreign exchange advantages were granted to entrepreneurs.

Their combined effect is to render the opportunity cost of investment capital extremely low. Examples of situations where it becomes practically nil are easy to quote. Thus, for example, the author of a study on CORFO reached the following conclusion: "Implicitly, but unmistakably, CORFO converted the hard foreign currency loans to enterprises or agencies into domestic loans. This policy was mainly the consequence of two events: the rampant inflation and the fact that CORFO was lending without a dollar or other escalator clauses. As a result, only a fraction of the real value of these loans has ever been repaid by the recipient enterprises."[71] In general, the real rate of interest has often proved negative and conducive to inflation for those firms having access to bank credit in Chile[72] and, we believe, in other Latin American countries. Thus, what really counts is getting access to credit and government favours. For those who manage it—and it is a matter either of public relations or of a solid financial position—capital is neither scarce nor expensive. The trouble is that the bulk of government support thus accrues to entrepreneurs, who really could manage without it, while small-scale industries and workshops are really starved for capital. W.P. Strassman is probably right when he says that the "error is in the direction of using capital and labour too little with one another. The sectors with too much of one factor cannot get, or do not seek, enough of the other".[73]

As to fiscal incentives, the Brazilian legislation providing support for projects approved by SUDENE is an excellent case in point: up to 50 per cent of the income tax due from enterprises may be channelled into such investment and finance up to 50 per cent (and in exceptional cases up to 75 per cent) of the new project, while half of the balance is provided as a loan by SUDENE at a 12 per cent —that is to say, strongly negative—interest rate![74] No wonder that in such circumstances the investment cost of a new job works out at about 6,000 dollars and the employment generated is negligible, as compared with the tremendous pressure of unemployed and underemployed in the Nordeste. Hirschman tries to minimize, however, the distorting effects of this legislation, on the ground, it is true, that new enterprises would anyhow be using the most advanced technology without trying to make it more labour-absorptive. The least one can say is that government policies should not be designed in such a way as to reinforce undesirable features in private sector behaviour.[75]

Next, we should mention fiscal incentives to plough back profits, which once more favour over-capitalization so long as similar advantages are not granted for an increase in the payroll as for an accumulation of capital.[76] As Celso Furtado points out, subsidies in the form of low rates of exchange for imports and of preferential credits were being granted mainly for the purchase of equipment, less for construction and practically not at all for working capital. This created artificial conditions for automation and over-capitalization with respect to fixed capital.[77]

Inflation has been exerting a powerful pressure in the same direction, at least among far-sighted entrepreneurs who, distrustful of liquidity, plough back their profits as quickly as they can into fixed investment and stocks of raw materials and also into construction. In fact, the relatively low cost of construction as compared to that of equipment[78] and the belief that the value of buildings at least keeps pace with the general increase in prices make many industrialists indulge in lavish prestige construction, not at all warranted by the needs of production.[79] Thus, we often get a dismaying situation: capital available in the form of subsidized credit and fiscal rebates is wastefully spent on over-capitalized equipment, while the enterprise's own funds go into unnecessarily big investment in buildings. Intensive investment actually goes hand in hand with the acute shortage of working capital.

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[71] M. Mamalakis, "An analysis of the Financial and Investment Activities of the Chilean Development Corporation: 1936-64", *The Journal of Development Studies*, January 1969, p. 122.

[72] L. J. Johnson, "Problems of Import Substitution: the Chilean automobile industry", *Economic Development and Cultural Change*, January 1967, p. 213.

[73] W. P. Strassman, *Technological Change and Economic Development. The Manufacturing Experience of México and Puerto Rico.* (Ithaca, N.Y., Cornell University Press, 1968), p. 148. See also M. H. Simonsen, *Brazil 2001* (Rio de Janeiro, 1969), p. 56: "The gulf between the phases of our industries in output and employment arose simply from a development policy completely divorced from the principle of comparative advantage".

[74] See for a description of the theme A. O. Hirschman, "Desenvolvimento Industrial no Nordeste brasileiro e o mecanismo de credito fiscal do Artigo 34/18", *Revista Brasileira de Economia*, No. 4 (December 1967), pp. 5-34.

[75] A full assessment of the working of the fiscal credit mechanism based on article 34/18 would require a discussion of alternative public investment forgone because of the reduction in revenue. On the other hand, it should be remembered that red tape makes investment under the scheme a lengthy affair; in the meantime money due as tax is deposited in a public bank and thus, for all practical purposes, it is transformed into a forced loan to the Government. Were these funds properly used, red tape should for once be recommended!

[76] See W. Paul Strassman, op. cit., pp. 127-128.

[77] Celso Furtado, *Un Projeto para o Brasil* (Rio de Janeiro, 1968), p. 43.

While capital is made excessively cheap, labour costs exceed the wage bill by a very substantial margin on account of different "social charges" and taxes proportional to the wage bill, which to make things worse are often used inefficiently or altogether diverted to aims which have little to do with their original purpose. Both entrepreneurs and workers complain; the former because labour costs are high when compared with the productivity level, the latter because they are underpaid, as far as wages are concerned, while the fringe benefits financed out of "social charges" are of very poor quality and add little to the worker's level of living. Of the two, the workers have more reason to complain, as the relative share of wages in value added is very low indeed and moreover keeps decreasing;[80] the adoption of capital-intensive techniques in a highly imperfect market with administered prices explains such a trend, but by no means justifies it. Social unrest becomes in the eyes of many entrepreneurs an additional reason for prefering automatized equipment, so as to reduce labour problems to minimum, to say nothing of the fact that, paradoxically, it may be easier to staff a highly automatized plant with a few not very skilled hands than a less mechanized factory where hundreds of specialized workers are needed.

The conjunction of the factors described above, all working towards a capital-intensive bias, is so powerful that it would be unreasonable to expect entrepreneurs to behave in a different way from the way they actually do. One might, at most, charge them with bad faith when they invoke the argument of "competitiveness".

While working in protected and imperfect internal markets with administered prices they reap all the benefits of technical progress through a higher margin of profits.[81] Why should they want to bring in more competition, at the double risk of reducing the scale of production for individual enterprises and being compelled to share the advantages of increased productivity with the consumers by means of a decrease in prices? As to external markets at the developing countries' end, the problems seem to lie much more with the institutional and organizational factors than with the cost-price structure of the new industries[82] (which could always be corrected by means of a subsidy scheme). In any event, the crux of the matter is to be found at the other end: what developing countries need above all to increase their industrial exports is access to the markets of Europe and United States.

Our real quarrel is not with individual profit-seeking capitalists but with the "collective capitalists"—the States—for having confused development goals with maximization of the profits of a handful of entrepreneurs in their industrialization policies. The same instruments —fiscal, credit, foreign exchange policies— could have been used in a different way, along lines discussed above in chapter I, 3 (*a*), so as to reduce instead of augment the gap between growth of output from newly established plants and increase in industrial employment.

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[78] According to W. P. Strassman construction costs in Mexico are about 25 per cent cheaper than in the United States, but, on the other hand, the price of equipment is about double. The ratio is therefore 0.375 if we take that of the United States as 1.

[79] The trend in industrial design today is, on the contrary, to reduce the "shell", leaving equipment in the open air or under a light shelter, whenever possible, in order to save on investment outlays and reduce the capital-output ratio.

[80] In Brazil the relative share of wages in the value added by modern industries decreased from an average of 27 per cent in the decade 1941-50 to 20 per cent in 1951-60. The corresponding figures for the traditional industries are 22 per cent and 20 per cent (Celso Furtado, op. cit., p. 36).

[81] See for this point Anibal Pinto S. C., "Concentración del progreso técnico y de sus frutos en el desarrollo latinoamericano", *Economía*, Año XXII, fourth trimester 1964, pp. 29-84 and more particularly pp. 58 and 77.

[82] This is recognized now even by A. O. Hirschman in his article "The Political Economy of Import-Substituting Industrialization in Latin America", *The Quarterly Journal of Economics*, February 1968.

III. Some conclusions and suggestions

Throughout this paper we have been arguing that selection of techniques could meaningfully become an integral part of development policies even though, in the context of "mixed economies", practical difficulties may prove considerable.

Designing of such policies requires, as a first step, collecting more empirical knowledge about the working of the technological market in its broadest sense: organizational and institutional aspects of supply of technologies from local and foreign sources, mechanisms of decision-making, channels of diffusion in low-productivity sectors, actual proportions between imitative transfers, adaptation and creative innovation, degree of utilization of the actual opportunities of choice, etc. It is suggested that such a study should be given high priority.

Effective government intervention in the realm of selection of techniques requires creating or strengthening, as the case may be, of project evaluation workshops. In order to work efficiently such units should be staffed with high-level specialists fully aware of the specific conditions of the country concerned. They should enjoy considerable autonomy and be independent of the government officials who take investment decisions in the public sector. It is suggested that evaluation work on behalf of Governments might be done by specially created government-financed institutes for the economics of technology. Such institutes could be, at the same time, entrusted with advisory functions in policy-making, research and post-graduate training of personnel for planning and policy-making bodies. Emphasis should be on the quality of the personnel and on the work done rather than on the size of the institute. Evaluation of selected projects should be done in depth as much as possible, even at the price of reducing, during the initial period, the number of projects scrutinized.

At the same time the utmost priority should be given to the creation or expansion, as the case may be, of project designing workshops. It would be advisable to have them, whenever possible, in the public sector, or to organize them in the form of co-operatives. Government-owned project designing workshops should be prepared to accept contracts from the private sector. It is furthermore suggested that the possibility of international specialization and co-operation in the field of project designing be explored on a regional basis. For some Latin American countries project designing in certain fields (e.g., architecture and town planning) might even become an export item to other countries: project designing is a skilled-labour-intensive activity; it should give the advantage to low-cost-of-living countries with a relative abundance of professionals.

The advisability of creating public agencies for imports of technology should be also examined. Such agencies might be entrusted, in addition, with organizing imports of second-hand equipment on a selective basis. The negative experience accumulated hitherto in this field is mostly due to the fact that such deals, which become a source of easy profits when left in private hands, were being done in a most undiscriminating way.[83]

The scope of action of institutions suggested in the second to the fifth paragraphs above need not be limited to the public sector alone. It could be easily extended to those private sector projects which are heavily financed out of public funds through development banks, development corporations, etc. With a certain number of direct controls, such as licensing of big private projects and of foreign collaboration agreements, it might be possible to cover a still bigger part of private industrial investment.

In a mixed economy indirect operational controls play a pre-eminent role. They are the only way of influencing those private investors who do not come within the scope of direct controls because of the size of their investment. Furthermore, when properly used, they should very much restrict the need for direct government intervention with respect to big private sector projects. As private entrepreneurs cannot be expected to use shadow prices instead of actual prices in their profitability analysis, policies of support for industrialization should be radically changed. Investment capital should be made more expensive, and labour costs lower, without impairing, however, the level of real wages,[84] and working capital should be easier to obtain. Facilities should be extended to those who purchase locally made equipment and technology, while redundant imports of foreign equipment and know-how should be banned. Investment should be discouraged whenever it is possible to increase output by introducing a second or third shift.[85] It should be possible to arrive at these results by using, in a different and more imaginative way, the instruments which are now being misapplied; selective fiscal and credit policies, as well as subsidies.[86]

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[83] See in this connection the interesting point made by J. R. Meyer in "Transport Technologies for Developing Countries", *The American Economic Review* (May 1966, pp. 83-90): it would seem logical to transfer automobiles and trucks from high to low labour cost countries at some point in their life, when the labour required for maintenance becomes relatively substantial.

[84] Fiscal revenue collected from industries could be increased in such a way as to allow the Government to finance all social services for workers out of its budget.

Up to now we have been dealing with ways of improving actual selection out of the range of available technologies. Long-term policies should concentrate, however, on enriching the spectrum of efficient technologies suited to the specific conditions of each country. Science, education and research policies should therefore be given, in fact, and not only in words, the same status in development strategy as industrial, agricultural, trade or financial policies.

Research should not only be expanded but made more purposive, which is not tantamount to giving a privileged status to be applied at the expense of the fundamental research. Primary government responsibility in the field of science and research should be recognized, but ways of associating the private with the public sector, at least financially, should be found. The argument that poor countries cannot afford to spend more on science should be opposed; because they are poor, they cannot afford not to take this chance of building a short-cut to development or, to be more precise, of providing one of the essential components to it, the other being social and institutional change.

Nor should "big science" be mistaken for the whole scientific field. Latecomers from developing countries are perfectly capable of doing much more than "reinventing the wheel"; denying them this possibility means either persisting in some kind of ethnocentric prejudice or playing with the ghost of "comparative advantage" understood in the most static way.[87] But scarce resources must be husbanded in a reasonable way, and this means concentration in the triple sense of avoiding wasteful duplication of efforts, guaranteeing scientific institutions the minimum efficient size, and setting out the right priorities for research.

Avoiding duplication implies establishing effective international co-operation. When insisting on the need to foster local research and to ban wasteful import of know-how, we are not taking up a position against the transfer of knowledge from abroad as such. We think, on the contrary, in terms of a comprehensive policy including adaptable transfers of know-how, followed by local research and development,[88] and strong concentration on creative innovation in areas where the chances of getting an effective technology from abroad are slim.

The import component of technological development will depend on access to information and know-how. Hence the urgent need of radically improving the present highly inadequate technological information network and of finding suitable forms of co-operation among countries. It is, in particular, suggested that the United Nations and its specialized agencies should look into the possibility of increasing the flow of information among the developnig countries of Latin America, Asia and Africa and assist them in entering into effective working relations in the field of industrial, technological and scientific exchanges. The technological and scientific potential of developing countries should be surveyed with a view to making their experience and experts available to other developing countries through the channels of technical assistance. We submit that Latin American experience may prove very useful to South Asian countries, and vice versa, not only in such fields as tropical medicine and agriculture, but also in that of industrial know-how.

Small countries cannot afford to create too many research institutions meeting the requirement of minimum efficient size.[89] But they can either pool their efforts in order to create international institutes with or without United Nations support, or work out specialization agreements with other countries of the region, implying mutual provision of services. The second formula seems less cumbersome, but they are not mutually exclusive.

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[85] In other words, some kind of fiscal credit or even subsidy should be given to industrialists who fully use their production capacity.

[86] Celso Furtado came out (op. cit., pp. 47-49) with an interesting suggestion of differential taxes on remuneration of capital and the wage bill in consumer goods industries, coupled with subsidies for industries producing equipment.

[87] For the latter point, see F. Chesnais and C. Cooper "*L'impact des progrès scientifiques et technologiques des pays avancés sur les pays sous-développés*", Paris, March, 1968 (mimeographed).

[88] To start from a high point and to go ahead—this is the only strategy which might give an advantage to the latecomer in certain cases; the Japanese example is very instructive in this respect.

[89] The same applies to universities. Their creation for prestige reasons in too many places at the same time leads to a dispersion of scarce talents and resources, which adversely affects their functioning. Unfortunately this happens to be the case in several Latin American countries (see O. Maggiolo, op. cit).

As for the priorities of research, they must be worked out in each country in conjunction with its long-term development strategy, based of course on a thorough assessment of the country's resources and potentialities. We shall limit ourselves to emphasizing the need to give a great deal more attention than hitherto to low-productivity sectors and the moderate capital-intensity range of efficient techniques.[90]

These are areas where there is little likelihood of learning anything very new from developed countries, as they do not happen to be working on such subjects (a great deal could be learned, on the other hand, from exchanges between developing countries on the lines suggested above).

Of course agriculture, cattle breeding, fishing, forestry, and "biological engineering" are of vital interest for several Latin American countries, the current prejudice among intellectual *élites* against this kind of research notwithstanding. The more so that, according to an eminent British specialist in food problems, "we do not at present know what to grow; we may not even know how to farm. More advice, based on temperate zone experience, is of little value because you cannot teach what you do not know. A great deal of research on tropical agriculture has been, and is being done; it is concerned mainly with industrial crops (such as cotton, rubber and sisal) or with foods crops (such as coffee, pineapples, sugar and tea) that can be sold to industrialized countries. Much less attention is even now being given to good crops for local use".[91] At this point we should recall the need of having a more elaborated typology of agricultural techniques (as suggested in chapter I, section 4 (*c*). Another major difficulty is the need to see clearly the pattern of interrelationships between technological and institutional change in agriculture.

Another privileged area should be construction tackled simultaneously at the levels of building materials, methods of construction and project designing. At all these levels, the present practices bring about a considerable waste of resources and job opportunities. It is believed that construction might play an even more important role in employment creation than hitherto if low-cost housing schemes could be devised[92] and implemented on a large scale. Such programmes would probably bring about an increase of national income and of the share of labour-intensive investment in it while it was being implemented and a lasting shift in the consumption-mix after its completion (if we agree to include the real or imputed value of rent, as the case may be, in the consumption bill of the family which rents or owns the house).

This brings us to our last point, which does not relate, strictly speaking, to the selection of techniques. We mentioned the possibility of improving the over-all marginal capital-output ratio and increasing the number of jobs created through new investment by varying the output-mix and loading it with labour-absorbing goods, subject to the limitation that the substitution of such goods for other more capital-absorbing goods and/or for exports of these goods is feasible. At the same time, it was felt that, as a rule, there was little elbow-room for such a manœuvre (which in a planned economy would even be considered as the correction of a planning mistake). Now, in the long run it might be possible to influence more substantially the output-mix and to load it more with labour-absorbing goods, both on account of the altogether new products which are incorporated into the consumption pattern, and eventually production, as a result of scientific progress[93] and because of the changes in the demand induced by income policies. It is even reasonable to expect that the net result brought about in this way could far exceed the combined yield of the measures suggested above to improve the selection of technologies proper. Thus, for example, increasing the relative share of wages in value added by industries would certainly bring a substantial increase of demand for labour-absorbing consumer goods of both industrial and agricultural origin. The effect of the increase on poor peasants' incomes could be still more spectacular, so much so as to make the experts of ILPES believe that industries considered at present "vegetative", and which happen to be characterized by moderate capital-intensity, might again become dynamic.[94] Such an increase in peasants' incomes could be most effectively achieved, were they given the opportunity of, and assisted in, satisfying the growing demand for food on the part of urban workers by efficient labour-absorbing methods of cultivation, animal husbandry and fishing and, at the same time, were their share in value added also substantially increased through appropriate institutional and organizational measures.[95] We know that such a programme of action would meet with formidable obstacles. But we also know that Latin America's economic and social development is at stake.

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[90] We take into consideration, however, a much wider spectrum of problems and technologies than the partisans of intermediate technologies.

[91] H. W. Pirie, *Food Resources: Conventional and Novel* (London, 1969), p. 111.

[92] Some views on the problem of construction are reproduced in annex IV.

[93] Quite obviously research does not aim only at new processes but also at new products. A new product may, however, have the same impact as a technological innovation in an old line of production, when it replaces the goods produced in the old line. This happens frequently in agriculture.

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[94] ILPES, op. cit.

[95] The latter should above all rationalize commercialization by guaranteeing minimum prices and, whenever possible, offering advance purchase contracts to producers, while at the same time reducing the margin accruing to intermediaries.

Annex I

TRANSFERS OF TECHNOLOGY IN JAPAN AND INDIA: A CONTRASTING EXPERIENCE[a]

There are two countries in the world which have borrowed technology heavily, Japan and India. An analysis would show that Japan has set an example showing how technology should be borrowed to strengthen the economy of a country. India during the same period has come to exemplify the hazards and pitfalls of indiscriminate borrowing. The lack of planning for the assimilation and the proper utilization of borrowed technology are landmarks of India's industrial history.

In Japan, whilst technology has been freely imported, the local expenditure on research and development has consistently been five to six times higher than the payments made for transfer of technology. Furthermore, the total expenditure on research and development has been between 3 and 4 per cent of the gross domestic product of the Japanese industry (see table A). It is an important deduction that to assimilate foreign technology we have to generate a proper base of local technological research and development.

Japanese products, till a few years ago, were considered second rate. By systematic borrowing of technology, by its scientific assimilation through local research, Japan has come to the fore as a producer of quality goods, and in many fields has established a world lead in technology. Each of the borrowed technologies has been meticulously used as a spring-board for furtherance of that technology adapting fully Japan's own materials and incorporating further innovations. Productivity and quality have been given the

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[a] Excerpts from an address delivered by M. M. Suri, then Director of the Central Mechanical Engineering Research Institute, Durgapur, to the Association of Scientific Workers of India on April 13, 1968.

Table A

JAPANESE EXPENDITURE ON TRANSFER OF TECHNOLOGY COMPARED WITH EXPENDITURE ON INDUSTRIAL RESEARCH AND DEVELOPMENT AND GROSS DOMESTIC PRODUCT

Year (1)	*Total expenditure on R and D (thousands of millions of yen)* (2)	*Of which by industry (thousands of millions of yen)* (3)	*Payments for transfer of technology (thousands of millions of yen)*[a] (4)	*(4) as a percentage of (2)* (5)	*GDP Japanese industry (thousands of millions of yen)* (6)
1955	56	29.3	7.2	13	1 494
1958	114	69.7	17.2	15	2 155
1961	245	163.8	41.7	17	4 252
1964	381		55.9	15	6 202

SOURCE: Second session of UNCTAD (TD/28/Suppl. 1).
[a] (47.8 yen = Re 1).

highest priorities. Japanese electronic industry, transistors, optical instruments, cameras, automobile, ship building, all are standing examples of borrowed technology-cum-local research.

Japan has never borrowed the same technology twice. The policies of the Government as well as industry reflect an enlightened approach. They have planned their borrowing in areas of greatest advantage.

Thus Japan has strengthened its technological base through borrowed technology backed by adequate local research, and has given to its industry the highest potential for world competitiveness, raising phenomenally production at home and exports abroad. With the latter, the balance of payments has always been in favour of Japan.

India is almost an antithesis of the Japanese example. After twenty years of borrowing of technology, India's technical base is as yet most slender, though the industrial base is the largest amongst the developing nations and well diversified.

The first striking default is India's neglect of indigenous research and development activities, especially in the crucial priority areas of engineering research. Normally when resources are meagre the need is all the greater to harness indigenous technical ingenuity through organized research and development. It is useful to note that besides Japan, the United States, the USSR and the United Kingdom spend approximately 3 per cent of their national income on research and development, whereas India now hardly spends 0.32 per cent. Considering also the comparatively small size of the Indian national income, the total expenditure on research is insignificant. The research output is also therefore less than meagre. The disaster that it has spelt in the industrial economy of the country is only too obvious to the trained technical observer.

It is not enough to invest crores and crores in the erection of plants. What makes these massive plants run profitably against altering product demand as time moves along is the day-to-day injection of local live technology, India's Rs 10,000 crore, over-borrowed, over-capitalized engineering industry, especially heavy engineering industry, is lying idle to the extent of 70 per cent of its capacity, while the import of engineering equipment of the order of Rs 600 crores a year continues. It could be proved by a rigid analysis that at least Rs 400 crores' worth could be manufactured utilizing only half the idle capacity installed in India, provided know-how in the shape of design drawings, etc., was made available to the manufacturing units. It is also noteworthy that this 400 crore production would close the gap between our exports and imports. Such is the true nature of our dependence and the dire need to beg abroad.

The negative impact of collaboration in India lies in that the foreign collaborator has succeeded subtly to create its feeling of continued dependence on him. We are ourselves to blame for it. Somehow, a halo has been created around the words "research and development". Entrepreneurs in public and private sectors appear convinced that research is extremely expensive. To a certain extent scientific advancement like the hydrogen bomb, guided missiles, satellites and other achievements of the West have helped reinforce the impression that research is expensive and underdeveloped countries can ill afford it. But our need is not for basic research, nor for ultimate sophistication in research. Our need is for plain sound engineering applications, high productivity under local environment, and good quality control. Adaptive and environmental research on borrowed technology in order to use Indian materials, with Indian conditions of labour and available installed idle capacities, is what we need. This part of research, so vital to the success of our industrial ventures, cannot and will never be undertaken by anyone abroad. And the cost of such research, which we alone must conduct, is proved to be small in relation to its immediate and long-term returns. Without this type of local research we can never gain foreign markets, or hope to close the adverse balance-of-payments gap. It is also significant that our first breakthrough on sales of engineering goods abroad was in sewing machines, fans, etc., which we had developed by totally indigenous efforts.

Also in the negative balance have been the restrictive clauses in the past in collaboration agreements which forbid exports. This stipulation is adverse to foreign exchange balance of payments, and must be avoided. Here again, had we our own internal strength of research and development, the foreign collaborator would be inclined to be less rigid knowing we might copy and improvise and openly compete with him. Commercial expediency would then dictate that he rather join hands with us in joint ventures. Already those companies in India that have a somewhat stronger local technical base are able to obtain more favourable and profitable conditions of collaboration with a minimum of restrictions.

But generally the malady today goes deeper. Each time a new product is required in India, instead of utilizing existing capacity, in the absence of their own development activities, both the public and the private sectors are forced to make up new projects with new collaborators, fresh borrowing of capital, and new technical know-how. Even the Government, which should be the most enlightened and motivated entrepreneur in its short- and long-range policies, has not backed indigenous research, either by way of establishing the facilities, or by actual utilization of indigenous research. In fact, the Government today appears to be the greatest supporter of foreign collaboration and further borrowing, despite the idle capacities which are the largest in the public sector. Nor are any significant efforts being made towards new product development within the vast industrial network of the public sector.

Annex II

THE RATIONALE OF SOCIAL COST-BENEFIT ANALYSIS

We reproduce below the introduction of A. K. Sen's paper on "The role of policy-makers in project formulation and evaluation" (UNIDO 1967), which gives an excellent insight into the logic of social cost-benefit analysis, and also into the element of political decision inherent in it:

"1. In many countries there seems to be a gap between national development planning (including over-all industrial planning), on the one hand, and programming at the project level. The national development plan is usually formulated in terms of objectives involving such considerations as the standard of living, the average rate of growth, the level of employment, the balance-of-payments position, self-reliance, and distribution of income. In other words, the national plan is formulated in terms of broad categories of over-all national objectives. Although individual projects are developed within the broad framework of the plan (and sectoral programmes), the gap between national planning and that at the project level is, in most cases, not bridged. This is so for a variety of reasons; one of them is that, typically, projects are formulated and evaluated primarily in terms of commercial returns on investment, and this process does not take into account the full range of national objectives.

"2. A better alternative is to use the so-called "social cost-benefit analysis", which is essentially a tool to formulate and evaluate projects in terms of the explicit national objectives that underlie development planning for the nation as a whole. The interdependence is mutual, and a perfect plan requires feedbacks on either side. The social cost-benefit analysis tackles tactical questions at a project level of the product mix, the size of the plant, its location, the choice of technological processes, the use of different raw materials, factor proportions, the degree of specialization, opportunities for future expansion, time phasing, etc., so that projects are formulated and evaluated in order to fulfil the objectives of the over-all plan, including the sectoral programmes.

"3. The contrast between social cost-benefit analysis and the traditional commerical profitability analysis of the projects can be looked at from various points of view, which are separate but not independent of each other.

"(*a*) The objective of the commercial profitability analysis is to maximize the nominal profitability of investment, while that of the social cost-benefit analysis is to maximize national economic profitability as represented by the appropriately weighted sum of the net benefits accruing to different national objectives embodied in the national plan;

"(*b*) Another way of looking at the contrast is that, while commercial profitability is calculated on the basis of market prices of inputs and outputs, national economic profitability is calculated on the basis of shadow or accounting prices of inputs and outputs reflecting their social scarcity and value in the context of the targets of national development plan;

"(*c*) One consequence of the above is that while commercial profitability analysis ignores the so-called "external effects" working outside the market mechanism, the social cost-benefit analysis takes them into account explicitly;

"(*d*) Finally, future benefits and costs may be reduced to their present value by the use of a given market rate of interest under the commercial profitability analysis, while the present value or future benefits and costs under national economic profitability analysis are calculated by the use of the social rates of discount, reflecting the community's preference between present consumption and future consumption.

"4. The determination of national objectives and the relative weights to be attached to them (including the choice of the social rates of discount) fundamentally reflect the value judgements of the community made by the leadership. These are the functions of the policy-makers in a social cost-benefit analysis. However, under the present arrangements these functions are often performed by project technicians, quite unconsciously. This is especially the case under the commercial profitability analysis. The objective of the present paper is to show the links between policy decisions at a general level and the formulation and evaluation of industrial projects, so that we may be able to pinpoint the decisions which have to be made by the policy-makers to help the work of project formulation and evaluation within the framework of the national development plan.

"5. The determination of national objectives, the relative weights attached to them and the social rate of discount fundamentally reflect the value judgements of the community made by its highest political and administrative leadership. These are essentially the functions of the policy-makers which are unconsciously and unintentionally performed by technicians under the commercial profitability analysis."

Annex III

OBSTACLES TO AUTONOMOUS TECHNOLOGICAL DEVELOPMENT: THE CASE OF THE INDIAN FERTILIZER INDUSTRY

We reproduce below the concluding remarks of a mimeographed study on criteria for planning for nitrogenous fertilizer industry in India, prepared in October 1967 by the Planning and Development Division of the Fertilizer Corporation of India, Ltd. They highlight the tremendous obstacles to an adequate utilization of India's technological capability. The same factors are present in other developing countries; hence the interest of this concrete case:

"In the preceding chapters, the various factors which determine correct perspective planning for fertilizer production have been discussed in detail with concrete examples. These make it clear that sweeping generalizations made on this or that particular aspect of fertilizer production can, under no circumstances, be taken as some kind of universal dogma on such vital issues as raw material employed, end product to be produced, capacity to be set up, technology to be adopted, etc. This is particularly true in the context of our country's present state of development, requirements and resources. It has thus been shown how, in deciding any rational plan, all the integrated factors have to be considered together, including those which, apparently or on a relative basis, seem to be of minor importance. In other words, no single factor can or should be considered apart and separate from the rest in coming to any rational and sound conclusion.

"As a result of the study it has also been described what approach should be adopted in correct perspective planning. It has been particularly stressed that there is no dearth of highly coloured propaganda literature from manufacturers or suppliers or even much publicized catchwords like 'new technology'. It is essential that high pressure sales points on this are not taken at their face value but are closely and carefully adjudged and evaluated for their applicability in any particular case. It is to be clarified, in this connexion, that the paper does not attempt to make any rigid approach to the problems facing fertilizer planning; on the other hand, it has been explained how each scheme has to be judged on its merits, taking into account the various interrelated and interdependent factors.

"In the introduction it was mentioned that the dimensions of the problem of fertilizer and food production have been realized by all concerned but many difficulties have stood in the way of correct and perspective appraisal and concrete action thereupon for implementing the plans drawn up. It is only fitting that these difficulties, which are due to situations that are not quite right, should be recognized for what they are. Because of these difficulties, a situation has been created in the country in which real scientific economic and technical planning has not been possible. The chief reason for the difficulties has been various external factors and influences which have definitely stood in the way of such rational and sound planning. In fact, some of them are even anti-national in spirit and action.

"In order to pinpoint the actual conditions and climate necessary for correct perspective planning, it is proposed to detail out these factors which have stood in the way; such a description may be rather frank and outspoken but it has necessarily to be so if the aims and objectives of the presentation are to be clearly defined and achieved.

"These various factors and influences are not quite unknown. It is described how their aims have been towards furthering their own interests and how their action and attempts have had very little to do with the interests of the country, particularly the imperative need for it to attain self-sufficiency through self-reliance. Some of them are mentioned below, with their objectives and *modus operandi*.

"(*a*) Exporters of fertilizers in foreign countries and their agents and importers in the country: their objective mainly is to have continued opportunities for importing into the country more and more fertilizers from abroad, and for this they would like to see that there are delays in the establishment of production facilities within the country. It is to their interest that the later the establishment of fertilizer production in the country the greater their opportunities for making profits on imported fertilizers and for larger commissions for the agents.

"(*b*) Vested monopoly interests for supply of commodities which are not available indigenously, such as sulphur of phosphoric acid: their objective is to command the Indian market so that they will have a ready customer for their supplies. The *modus operandi* is to claim that they are actually coming to the rescue of the country to help it out of its major problems; they also carry out propaganda that certain end products, which necessarily require the importation of raw materials—products they have to sell—are the best for the country, though proven facts and experience are to the contrary. If successful, the results of such endeavours would not be to the interest of the country, which will have to be tied for vital fertilizer production to foreign supplies from monopolist sources.

"(*c*) International oil interests: the objective of these interests would be to see that any industry, including the fertilizer industry, in India develops along such lines that their market in India is assured. While today 70 per cent of the crudes being refined in India is imported, these interests know that, in the next five years or so, indigenous crude production may go up. But their interest is to ensure the market for their crudes. To achieve their objectives, these interests carry on propaganda that only naphtha-based fertilizer plants will be the most economic and, as against this, they have put forward arguments against utilization of indigenous raw materials such as coal/coke oven gas, to the effect that plants based on these raw materials are based on obsolete technology and will lead to high cost of production. It is obvious that the country cannot tie up its vital fertilizer production to imported raw materials in preference to indigenous raw materials.

"(*d*) Foreign manufacturers of particular types of machinery and equipment that can be used in the fertilizer industry and their agents: for example, certain single-source manufacturers of equipment such as centrifugal compressors would be interested to see that their machines are incorporated in fertilizer plants. Therefore, they are obviously interested in propagating that economies can be achieved by incorporating their machines in the process. Such claims have to be carefully considered in the light of actual requirements and resources of the country.

"(*f*) As if enough confusion is not created by the above, there are other institutions whose approach towards planning is to seize upon matters which have neither priority nor relevance in the country's predicament. They lay emphasis on non-essentials such as new theories and techniques of planning or productivity; this approach is lopsided since they tend to detract the planners from paying all attention to "first things first". In the country's struggle towards self-sufficiency through self-reliance, the approach of these institutions is secondary and unimportant and has no immediate relevance for application and, in fact, the country is forced to devote a lot of attention, effort and valuable finance to such lopsided approach, and energies are diverted from the main purpose of planning and establishing production in time. All such approaches do not contribute to real progress, development and advancement. An apt comparison would be that the country is in the position of a man who does not have the smallest piece of loin cloth to wear and is advised to institute development work for neckties.

"(*g*) Even in matters of financial assistance to the country on an international level, the associated conditions sometimes go against our motto of 'self-sufficiency, self-reliance and self-respect'.

"From the above it would be clear that, for correct and perspective planning, all the above outside factors and influences have to be very carefully judged and evaluated. For such planning to succeed, the only guiding and paramount factor is the long-term interests of the country itself and nothing else."

Annex IV

A NOTE ON THE CONSTRUCTION INDUSTRY AS SOURCE OF POSSIBLE EMPLOYMENT IN DEVELOPING COUNTRIES

A break-through in construction techniques continues to be a most urgent task. In this proposal for action for the first Development Decade, U Thant estimated the need for dwellings in the developing countries at 19 to 24 million per year. At conventional cost, this would require investment of about 10 per cent of the gross national product. With intensified research into low-cost solutions with mass projects and maximum non-monetary resources in labour and materials, it was believed that monetary outlays could be brought down to 500 dollars for each urban dwelling unit and another 500 dollars for the ancillary services and facilities. The monetary outlay on dwelling and ancillary services in rural areas should not exceed 200 dollars.[a]

In Latin America construction already plays, as we have seen, a significant role in labour absorption and we agree with Z. Slawinski when he writes that this role should become ever greater, provided unnecessary high mechanization is avoided and building materials become cheaper.[b]

But little seems to have been done up to now in the direction pointed out by U Thant. The bulk of building activities is constituted by luxury dwellings, public prestige construction and private prestige construction of banks, commercial and industrial buildings, motivated by the desire of avoiding liquidity in inflation-ridden economies and the relative cheapness of construction, at least from the industrialists' point of view. In these circumstances we consider it useful to quote at length from a study by J. Gorinski, "Construction: its role in the development of backward Economies".[c] Although this study was based on the experience of Tunisia, its conclusions may be relevant for the Latin American case.

"Windows serve as an excellent example of the erroneous practices in transferring Western architectural novelties to the developing countries from warm or hot countries. The so-called modern architecture uses a great deal of glass in the place of the traditional brick walls. The traditional architecture in the countries under consideration is characterized by small windows and large spaces of brick walls which isolate the interior and prevent it from overheating in the summer and overcooling in the winter. Windows are small but let in enough light. When large windows do appear, they are usually glassless, often protected by grids, and they serve the purpose of airing the interior. They are situated in shaded places, so that in most cases they look out on the patio. Age-long experience has enabled the local population to perfect this system of natural ventilation and preservation of the internal microclimate, even if the houses themselves are far from luxurious.

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[a] United Nations, *The United Nations Development Decade, Proposals for Action, Report of the Secretary-General*, New York, 1962.

[b] Z. Slawinski, op. cit., pp. 195-197 and 227.

[c] *Essays on Planning and Economic Development*, vol. III, Warsaw, 1968, pp. 63-80.

"The introduction of the Western-type 'glass-boxes' immediately creates conditions of overexposure to sun and unbearable heat, if there is no air-conditioning. In such cases it is also necessary to build at considerable expense concrete 'light-breakers'—the so-called *brise-soleil*. These are claimed to render the architecture monumental, but in actual fact they give it an air of pretentiousness which does not stand the comparison with the natural unforced dignity of traditional architecture. So this type of construction is much more expensive than the traditional one; it also involves the necessity of high continual investment, and in spite of all this creates much less comfortable internal conditions, particularly if the air-conditioning system breaks down after a while, or has never been installed to begin with. But this does not exhaust the list of economic and social shortcomings of this type of construction. The introduction of Western designs necessitates the use of materials and technologies which are not available locally, such as concrete, non-ferrous metals, installations of all kinds, etc. This in turn forces the builder to employ foreign experts, import machines and equipment from abroad, and excludes the possibility of employing local experts, who know only the local, traditional technology.

"So there rise numerous buildings designed by foreign architects, built by foreign contractors with the use of imported materials and machines. Some ornaments may be of local origin, but their cost is only a fraction of the total investment. Folk costumes of dubious authenticity worn by the attendants, carpets and furniture are sometimes the only reminders that one finds oneself in an African country, and not in Chicago, United States of America, or in Göteborg, Sweden.

"The prestige construction stands out in sharp contrast to mass slum construction in the towns and in the country. These houses, built by the dwellers themselves, are rarely built singly. They usually arise in clusters of appreciable size, and for all the poverty of the inhabitants, they bear certain traces of rational planning and order. The materials used (they are rarely the usual building materials, but rather all kinds of refuse and garbage) show great ingenuity and certain similarities to the traditional architecture. Of course, for the most part, these are simply one-room shacks, sometimes totally windowless, with only a door. These houses are overcrowded to extreme, unimaginable proportions. The various *bidonvilles* or *gourbi* of Africa, the *favelas* of Latin America, are usually considered the seats not only of extreme poverty but also of crime. They are, undoubtedly, the pathological symptoms of rapid but superficial urbanization. Nevertheless, as a substitute for construction for which there is social demand they are a better guide to practicable solutions, technically and economically speaking, than prestige construction. Not infrequently, what is more, the inhabitants of slums, when moved to new residential districts and new seemingly incomparably better and certainly much more expensive houses, prefer to return to their old slums. This is so primarily because of the unpleasant climatic conditions in the new houses built on Western designs. The former slum-dwellers also seem to feel alienated in their surroundings, while the slums preserve the spirit of strong tribal solidarity to which they or their parents had been accustomed before they moved to town.

"An examination of these matters has led some experts to conclude that the best solution to the housing problem will be to provide aid, guidance and material assistance to unorganized, individual building, i.e., to organize a system of 'aided self-help'. What several suggestions of this kind have in common is the correct tendency to cautiously develop and modernize the traditional craft technology; and to put housing construction outside the sphere of economic exchange (the latter postulate being more debatable).

"For if we push this reasoning to its logical conclusion, we might arrive at an economic model where the prestige construction would be excluded from the internal economic turnover (due to importation of know-how and materials), and housing construction would become part of non-commodity economy. It is our aim, however, to lend support to the thesis that construction, when it participates fully in the internal commodity exchange, may constitute one of the most important levers of economic growth, due to its intrinsic features which were discussed in the previous chapter.

Construction as a lever of growth in a developing economy

"The initial situation in the process of economic development is characterized, among others by abundance of manpower, both in the form of outright unemployment and in that of hidden unemployment in agriculture or the traditional services.

"So, the central planners are faced with the well-known dilemma of choosing the right technology and labour intensity for the production investment undertaken. If, however, the advantages of labour-intensive technologies in the industry are at least arguable, in construction they seem quite obvious for reasons presented above. The same final product may be achieved with the use of various technologies. Moreover, while industrial production is of a continuous nature, the construction cycle ends with each building finished, so that one building may be built with the use of an entirely different technology than the previous one.

"Thus in the early stages of the developmental process construction should be the branch of industry to apply the most labour-intensive technologies, as this will not in any way influence its future development.

"One further remark: thanks to the wide choice of technologies at its disposal, construction can avoid importation of material and to some extent also of industrial products required in the erection of houses. This is a very important feature in the developing countries, for they can then focus the already insufficient reserves of foreign exchange on imports of industrial plant and equipment. Of course, the use of local material will influence the design and architectural solutions applied. This will be an advantage architecture-wise, since the use of local material will ensure, or at least facilitate, the achievement of organic harmony of new buildings with the landscape and buildings already existing. Some functional difficulties for the industry may appear in some cases, especially with construction for the industry. In such cases it may be sometimes necessary to give up multi-storey designs or designs which ensure maximum economy of space for less economic ones.

"Lack of economy of space, however, will be quite profitable in such cases for it will mean much lower costs per unit of area.[d] Prestige hotel building projects provide a good example of this; it is believed for some obscure reason that a modern and luxurious hotel must have a tall multistorey structure. Such hotels are therefore being built, which necessitates sizable expenditure on various facilities and running costs. If bungalow-type or one-floor hotels were built, however, the same number of places could be had without the necessity of, or importation of, materials, etc., and with the use of local materials and manpower. In some instances I could mention, also the landscape and aesthetic value of the buildings themselves would gain a lot. Moreover, a radical drop in the unit cost of surface would enable the builders to increase the space considerably.

"There are also other reasons why, in the initial stage of development, construction should not be characterized by strict functionality and economy of space. As postulated here, construction based on local materials and technology will be highly durable. It may be expected, then, that in the course of time the buildings will come to serve various purposes and that consequently their interior will often be remodelled, adapted and modernized. This will be greatly facilitated if there is a certain reserve of area, which is all the more desirable that the cost of unequipped area in such buildings is very low. So, much can be said for creating a certain reserve of built-up surface, while construction is still labour-intensive cheap at the same time.

"Of course, it would be useless and needless to apply the same postulate to housing construction. The demand for dwelling space is so great that there can be no question of creating an unused reserve, even temporarily.

"We have already described our misgivings about the plans for institutionalization of housing construction on the basis of 'aided self-help' of the dwellers themselves. The dwellers should contribute to the construction of their houses, but only in auxiliary works, such as installation and improvement of fittings and appliances, or clearing up the rubble, landscaping of the residential district, etc.

"Also the limitation of individual, spontaneous construction in the towns may slow down the drive towards cities of families without an economic base there—which is quite desirable. Moreover, large-scale construction projects using traditional technologies create large possibilities of employment for the traditional craftsmen and contractors, and a gradual introduction of more modern forms of organization and method of work.

"Admittedly, the rationality of postulating wide-scale development of construction at an early stage of development may arouse doubts. It might be claimed that the great number of workers employed in construction may create an excessive and premature demand for food-stuffs and consumer goods. These doubts, however, might be answered by the suggestion that prestige construction projects be given up altogether and that part of the foreign exchange saved be earmarked for imports of food-stuffs.

"As the country industrializes, the traditional construction technologies may be modernized, thus gradually decreasing the share of construction in over-all employment to its usual proportions.

"By then, construction will have performed its role of *avant-garde* of industrialization." (Pp. 74-80.)

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[d] Of course this pertains only to those constructions where the outer walls are at all necessary. The climatic conditions may enable the builders to do without them where in European conditions this would be impossible.

TRADE POLICY AND THE LATIN AMERICAN CONSENSUS OF VIÑA DEL MAR

In the Declaration of Port-of-Spain the Inter-American Economic and Social Council (IA-ECOSOC) recognizing the urgent need to define a new approach to inter-American co-operation, resolved to establish a Special Committee for the purpose of preparing the bases and proposing suitable instruments of action of a new policy to strengthen such co-operation. It further laid down that, "based on the principles and objectives already defined within the inter-American system, this new policy shall be adapted to the Latin American proposals contained in the Consensus of Viña del Mar and to the proposals to be presented by the United States of America".[1]

At the request of the Chairman of the Special Committee on Latin American Co-ordination (CECLA), the secretariat of ECLA has prepared this document, which provides background and other data that may be useful for an examination of the various views and proposals relating to trade contained in the Latin American Consensus of Viña del Mar. The relevant paragraphs of the Consensus are therefore quoted in full, followed by background and other material regarding the point reached in the discussion of each subject and the international action taken thereon.

"II

> "To insist on the fulfilment of the agreements on the *status quo* (standstill commitments), as regards raw materials as well as manufactured and semi-manufactured goods. To reiterate the need for the consultative machinery envisaged by UNCTAD and GATT to be put in motion before the adoption of any measures which might signify a setback in the treatment of imports of Latin American products. To perfect this machinery at the inter-American level in accordance with the Declaration of the Presidents of America."[2]

The standstill recommendation was adopted in the May 1963 Ministerial Declaration of the Contracting Parties of GATT and was also incorporated in the recommendation contained in Annex A.II.1 of the Final Act of the first session of UNCTAD. In the inter-American context this same recommendation was recalled in chapter III, paragraph 5, of the Declaration of the Presidents of America. The Action Plan of Viña del Mar, adopted by the Inter-American Economic and Social Council in 1967, later stipulated: "At the request of the developing country or countries of the Inter-American System that feel affected by a presumed violation of the international standstill commitments, CIAP will serve as a forum for consultation, with a view to finding a satisfactory solution for the interested parties."[3] Nevertheless, the report entitled *"Comentarios acerca de la ejecución del Plan de Acción de Viña del Mar"* states that, as regards CIAP intervention in the case of countries that feel affected by presumed violations of the standstill commitments, not a single request had been made during the period under consideration.[4] There is no mention of any steps taken by Latin American countries in respect of violations of the standstill commitments in later reports on CIAP meetings either.

Naturally, any list of violations or presumed violations of the standstill recommendation would have to be based on information supplied by the very countries that felt affected by measures that they deem contrary to it.

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[1] *Final Report of the Sixth Annual Meetings of the Inter-American Economic and Social Council at the Expert and Ministerial Levels* (CIES/1470), 23 June 1969.

[2] Special Committee on Latin American Co-ordination, *Latin American Consensus of Viña del Mar* (Santiago, Ministry of Foreign Affairs, 1969), para. 12.

[3] Organization of American States, *Final Report of the Fifth Annual Meetings of the Inter-American Economic and Social Council at the Expert and Ministerial Levels* (OEA/Ser.H/XII.14) (Washington, D.C., Pan American Union, 1967), para. 31, p. 20.

[4] *Sixteenth meeting of the Inter-American Committee on the Alliance for Progress* (CIAP/270), 5 July 1968.

This was one of the reasons why the ECLA secretariat was instructed[5] to request Governments to inform it of specific cases of non-fulfilment of the principles and recommendations adopted at the first session of UNCTAD. The response to the communication on the subject that was sent to Latin American Governments was, however, disappointing, since only one country (from the Caribbean area) reported that there had been no cases of non-fulfilment in its case.

None the less, certain ECLA documents have referred to specific measures adopted by developed countries that can be deemed contrary to the standstill commitments. In the case of the United States, for example, the following can be cited: the law promulgated in August 1964, establishing import quotas for beef; the amendment of the 1965 Sugar Law which increased the share of domestic production in the total United States sugar consumption, thereby reducing the share of foreign (chiefly Latin American) producers; restrictions on imports of milk products and, more recently on tomato imports from Mexico. Reference can also be made to the steps taken by the United States in respect of its cotton exports for the marketing year 1966/67, which caused the world market price of Latin American cotton to drop, and prompted the cotton-producing countries to present an official memorandum to the United States Government requesting a return to the price level of previous years. This last case shows how difficult it sometimes is to identify violations of the standstill commitments, since it was not new restrictions or the increase of existing tariff barriers which had a restrictive or depressive effect on Latin American exports, but other measures, such as those designed to give the United States a larger share of the market or to facilitate the disposal of surpluses. Hence the following suggestion from an ECLA secretariat document: "It follows that the fulfilment of a recommendation such as the standstill recommendations needs to be posed in different terms. It is not merely a question of reopening discussion on the validity of the formula recommended (that no new tariff or non-tariff barriers should be created or existing barriers increased), but rather of negotiating multilateral agreements to ensure the effective fulfilment of the objectives implicit in the recommendation, i.e., that the share of the exports of developing countries in the markets of the importing developed countries, and thus in world commodity trade, should not be reduced."[6]

With regard to the standstill commitments it should moreover be pointed out that in the past two years there have been increasing signs of the return of protectionism in the United States. Several bills were submitted to Congress during 1968 proposing an extension of the import quota system to meat not covered by the 1964 restrictions and the establishment of quotas on numerous other products, *inter alia,* lead and zinc, certain petroleum products, iron and steel products and textiles not coming under the Arrangement regarding International Trade in Cotton Textiles. While the United States Congress did not pass any of these bills, the beginning of 1969 witnessed an intensification of the efforts of the protectionists to extend restrictive legislation. Out of slightly over 400 bills relating to trade and tariffs that were submitted to Congress between January and July 1969, over a hundred concerned the introduction of import quotas on products which, besides those already mentioned, included footwear, plate glass, iron and steel alloys, certain fresh fruit, electronic goods, woollen textiles and synthetic fibres. The plethora of restrictive bills is due of course to the fact that several bills refer to the same commodity. But besides these there are others of a more general nature which, without explicitly mentioning any particular products, none the less authorize the imposition of quotas on any imported commodity in certain circumstances, and particularly when a large proportion of the country's total consumption consists of imported goods. Other bills, finally, would require the United States Tariff Commission to conduct investigations to establish whether the importation of certain commodities is, or could be, prejudicial to domestic producers of similar goods, thus providing a basis for the adoption of restrictive measures. There is no detailed information on the actual scope of the many restrictive bills currently before the United States Congress, but a list of them is given in an official publication of the United States Department of Commerce.[7]

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[5] See resolution 264 (XII), adopted by the Economic Commission for Latin America at its twelfth session, paragraph 3 (e) (*Official Records of the Economic and Social Council, Forty-third Session, Supplement No. 4* (E/4359)), p. 86.

[6] See ECLA, "Latin America and International Trade Policy" (E/CN.12/773), 30 March 1967, p. 66.

[7] *International Commerce,* issues of 10 February, 10 March, 7 April, 5 May, 14 July and 11 August 1969.

This fresh outbreak of protectionism in the United States undoubtedly represents a serious attempt to change the relatively liberal trend of the country's trade policy during recent years, and even threatens to cancel out the progress made towards reducing tariff barriers, especially the concessions negotiated in the Kennedy Round. Even though the tariff concessions made to the developing countries during the Kennedy Round were very significant, it seems clear that, if the attempts to reintroduce protectionism in the United States were to bear fruit, they would set off a succession of similar restrictions in other developed countries which would inevitably affect Latin American exports. Furthermore, even if most of these protectionist bills were to be defeated (which is far from certain in any case), the mere fact of their being submitted and the publicity they receive in trade circles are sufficient to have an adverse effect on trade, because they create a climate of uncertainty about conditions of access to the United States market which impedes efforts to promote and expand exports from the developing countries.

The paragraph from the Consensus of Viña del Mar quoted above reiterates the need for the consultative machinery envisaged by UNCTAD and GATT to be put in motion before the adoption of any measure which might signify a setback in the treatment of imports of Latin American products. This system of preliminary consultation was included by UNCTAD among the recommendations for action to be taken by developed market economy nations[8] adopted at its first session but has not been properly implemented. Moreover, with reference to the steps that should be taken by developed countries to ensure a rapid and sustained increase in the export income of developing countries that are incorporated in the new Part IV of the General Agreement on Tariffs and Trade, article XXXVII provides for a system of consultation to permit consideration of the reasons for not complying with the provisions in Part IV given by countries which have not done so. A decision of the Contracting Parties adopted on 5 April 1966 provides that, where the consultations under article XXXVII do not lead to a satisfactory solution, the procedure laid down in article XXIII may be followed. This article, on the protection of negotiated concessions and advantages, empowers the Contracting Parties to authorize the contracting party affected to suspend the application of such concessions or obligations as they deem appropriate.[9] It is important that consultations should take place *before* the adoption of any measure that might be prejudicial to the export trade of developing countries as other solutions could be examined during these consultations. Furthermore, it is obviously much easier to reach an understanding prior to the adoption of a restrictive measure than to reverse the steps once taken.

The consultation procedures set up by UNCTAD and GATT do not mean that consultative machinery should not be established within the inter-American system. The Declaration of the Presidents of America refers to the need to strengthen the system of intergovernmental consultations and to carry them out sufficiently in advance where the placing and sale of surpluses and reserves are concerned,[10] but this is not the only sphere where the system should be improved and made more effective. As pointed out in another document, the setting up of suitable consultation machinery within the inter-American system would make it considerably easier to carry out commitments entered into within the framework of co-operation in the hemisphere.

> "To continue to take steps to eliminate tariff and non-tariff obstacles as, for example, quotas, safety and health regulations, etc., which affect the entry and marketing of primary commodities. To negotiate with the United States timetables for the elimination of these market restrictions of Latin American products of special interest, jointly identifying the obstacles in question. To press for another special round of negotiations with GATT for primary commodities not properly dealt with in the previous round."[11]

In the Declaration of the Presidents of America, the Governments agreed "to act in co-ordination in multilateral negotiations to achieve, without the more highly developed countries' expecting reciprocity, the greatest possible reduction or the elimination of tariffs and other restrictions that impede the access of Latin American products to world markets.

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[8] *Proceedings of the United Nations Conference on Trade and Development: Final Act and Report*, Geneva, 23 March to 16 June 1964 (United Nations publication, Sales No.: 64.II.B.11), Annex A.II.1.

[9] See GATT, *Basic Instruments and Selected Documents, Fourteenth Supplement* (July 1966).

[10] Organization of American States, *Meeting of American Chiefs of State* (OEA/Ser.C/IX.1) (Washington, D.C., Pan American Union), chapter III, para. 4, p. 70.

[11] *Latin American Consensus*, op. cit., para. 13.

The Government of the United States intends to make efforts for the purpose of liberalizing the conditions affecting exports of basic products of special interest to Latin American countries, in accordance with the provisions of article 37 (a) of the Protocol of Buenos Aires."[12] In article 37, the member States of the OAS undertook to make individual and united efforts to bring about the reduction or elimination, by importing countries, of tariff and non-tariff barriers, except when such barriers were applied to diversify the economic structure, to speed up the development of the less developed member States or to intensify their process of economic integration.[13]

In addition to previous undertakings, the Action Plan of Viña del Mar of June 1967 stipulated that "CIAP will suggest forms of co-ordinated action that the member countries can take in multilateral negotiations to achieve elimination, or as great a reduction as possible, of customs duties and other restrictions that affect Latin American products, and will propose to the member Governments that, in due course, they conduct new multilateral negotiations at appropriate international gatherings".[14]

The attempts to open up world markets to Latin American products cited in the above documents are nothing more than a reaffirmation, at the inter-American level, of the obligations assumed by all developed countries on a world-wide basis both in the Final Act of the first session of UNCTAD and in the new Part IV of the General Agreement on Tariffs and Trade. Little progress towards trade liberalization for exports from developing countries has, however, been made in either case, and this is probably because the obligations are of a general nature and no definite procedure is laid down for carrying them out. The Programme of Action adopted at the GATT Ministerial Meeting in May 1963 therefore imposed more specific obligations concerning the steps to be taken to expand exports from developing countries by fixing dead-lines for their implementation, though unfortunately the attitude of the European Economic Community and the reservations of other developed countries made these provisions virtually ineffective.

As regards the definition of general obligations on trade liberalization, the Consensus of Viña del Mar thus quite rightly points to the need to take another step towards the negotiation of specific programmes of action by stressing the desire of Latin American countries to "negotiate with the United States timetables for the elimination of these market restrictions . . . , jointly identifying the obstacles in question".[15] The joint identification of these obstacles and the negotiation of programmes to eliminate them are fundamental to the permanent dialogue which Latin America intends to keep up with the United States and which must obviously entail the establishment of suitable institutional machinery for consultation and negotiation. According to the Declaration of Port-of-Spain, one of the most important tasks before the Special Committee of IA-ECOSOC is precisely that of proposing suitable instruments for the implementation of a new policy designed to strengthen inter-American co-operation.

The last part of this paragraph from the Consensus of Viña del Mar stresses the desire of Latin American countries for another special round of negotiations in GATT for primary commodities not properly dealt with in the Kennedy Round. It is well known that, at the conclusion of this Round, the developing countries taking part approved a joint statement to the effect that the most important trade problems taken up during the negotiation remained unsolved; they therefore requested that appropriate steps be taken to initiate a further round of negotiations in GATT as soon as possible for the purpose of reaching agreement on outstanding problems, particular attention being given to the conclusion reached at the GATT Ministerial Meetings in 1963 and 1964 and to the provisions of Part IV of the General Agreement.[16]

As far as concessions in favour of export products of developing countries are concerned, an assessment of the Kennedy Round indicates that these chiefly benefit trade between the developed areas themselves. On this point, a study prepared by the UNCTAD secretariat states: "The product groups receiving the deepest tariff cuts were those characterized by advanced technology or capital intensity. These products are generally assumed to have higher price elasticities than primary products and they have a relatively low component of imports from developed countries. The existing trend towards a more rapid increase in world trade in sophisticated industrial goods than in primary products is therefore likely to be strengthened. Moreover, the expanded trade opportunities in chemicals could be expected to accelerate present tendencies for substitution of primary products by synthetics. It would appear, therefore, that unless there are additional measures in the commercial policy field to correct these tendencies, the Kennedy Round will contribute to a further decline in the relative share of developing countries in world trade."[17]

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[12] *Meeting of American Chiefs of State*, op. cit., chapter III, para. 1, p. 69.

[13] OAS, *Protocol of Buenos Aires* (OEA/Ser.A/2.Add.2) (Washington, D.C., Pan American Union, 1967), p. 14.

[14] *Action Plan of Viña del Mar*, op. cit., p. 18.

[15] *Latin American Consensus*, op. cit., para. 13.

[16] See GATT, "Joint Statement by the developing participating countries in the Kennedy Round Negotiations" (GATT/994), Press Release, 30 June 1967.

Thus far, however,the majority of the developed countries have not seemed to be in favour of further trade negotiations in the near future. In fact, at the close of the twenty-fourth session of GATT in November 1967, the Contracting Parties adopted the following declaration: "The Contracting Parties reaffirmed that the liberalization of world trade by means of negotiations remains the primary objective of the General Agreement, but noted that, in the light of the recent conclusion of the Kennedy Round, no new major initiatives for a multilateral and comprehensive move forward could reasonably be expected in the near future."[18] Nevertheless, while stressing that no commitment was involved on the part of Governments, the Contracting Parties recognized that it was important to proceed to prepare for further advances within the Programme for Expansion of International Trade. With that end in view, they agreed to undertake a co-ordinated programme of work through the establishment of a Committee on Trade in Industrial Products to explore new opportunities for the liberalization of trade in these products, and an Agriculture Committee to examine the problems in the agricultural sector, and the reactivation of the Special Group on Trade in Tropical Products to continue examining problems affecting trade in tropical products and to suggest ways and means of overcoming those problems.

The importance of the programme of work adopted by the Contracting Parties to the General Agreement should not be underrated or the real contribution it can make towards solving the developing countries' problems underestimated. It should nevertheless be recognized that there are sound reasons for the Latin American countries to be interested in arranging as soon as possible a new round of trade negotiations in which consideration can be given to the reduction or elimination not only of tariff barriers, but also and specially, of non-tariff barriers, as originally proposed but not accomplished in the Kennedy Round. To that end, any support the United States can give to this move on the part of the Latin American countries could contribute decisively to its success, since, as happened in the case of the proposals to establish a system of general preferences, the United States' attitude greatly influences decisions adopted at the international level. Moreover, any progress made in liberalizing the conditions of access of Latin American products to the United States market would be a great help in achieving similar objectives in the markets of other developed countries.

In the Latin American Consensus it was also decided "to point out the vital importance of observing the timetable fixed at the second session of UNCTAD on commodity agreements, which include provisions to ensure fair and remunerative prices for Latin American exports, respect for the commitments established by previous agreements, the conclusion of new agreements and the broadening of their sphere of action where necessary".[19]

The decisions adopted at the second session of UNCTAD in relation to agreements and other international arrangements on commodities are set forth in resolutions 16 (II) on international action on commodities, and 17 (II) on general agreement on commodity arrangements.[20] The present position with regard to the agreements and decisions embodied in these resolutions is as follows:

(a) *Resolution 16 (II) on international action on commodities*

(i) "The United Nations Cocoa Conference should be reconvened immediately, or not later than June 1968."

This decision has not been implemented because little progress has been made in settling a number of points in the negotiation of the draft agreement. In mid-1968 a meeting of the Consultative Committee of producing and consuming countries was held, and although agreement was reached on certain points related to the quota system and price levels to be included in the agreement, others remained unsettled pending further consultation. At another meeting, at the technical level, held in June 1969, discussions continued on export control problems, the distribution of votes of member countries, the position with regard to processed cocoa and liberalization of trade in cocoa, but it was not decided when the Conference should be reconvened. The Secretary-General of UNCTAD was therefore authorized to conduct further bilateral consultations with the producing and consuming countries. Thus, a year and a half after the decision was adopted at the second session of UNCTAD, it is still uncertain when the Cocoa Conference is to be reconvened.

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[17] See *The Kennedy Round: estimated effects on tariff barriers* (United Nations publication, Sales No.: E.68.II.D.12), p. 4.

[18] Document GATT/1013, 7 December 1967, p.3.

[19] *Latin American Consensus*, op. cit., para. 14.

[20] *Proceedings of the United Nations Conference on Trade and Development, Second Session*, vol. I, *Report and Annexes* (United Nations publication, Sales No.: E.68.II.D.14).

(ii) "Governments (are invited) to take all necessary steps to ensure the success of the United Nations Sugar Conference with the objective of bringing into operation an international agreement by 1 January 1969."

The Conference was held in September 1968 and concluded with the adoption of a new International Sugar Agreement, which came into force on 1 January 1969 and will remain in force for five years, subject to review before the end of the third year in order to determine whether any amendments should be introduced, or to take steps to adopt a new agreement. Neither the European Economic Community (EEC) nor the United States is a party to the Sugar Agreement; it is therefore likely to run into difficulties which may prevent it from operating effectively. The fact that the EEC is not a contracting party means that the regulations governing export quotas do not apply to an important world market supplier whose exportable surpluses are increasing as a result of the incentives provided by the Community's common agricultural policy and the subsidies granted for sugar exports through the ECC European Agricultural Guidance and Guarantee Fund (EAGGF). The fact that the United States—the major world sugar importer—is not a party to the Agreement is not very important from the standpoint of the regulations established for exports from the signatory countries, since sales to that market are not included in their export quotas. It is important, however, as far as some of the general objectives of the Agreement are concerned, such as the co-ordination of sugar-marketing policies and the organization of markets, giving the developing countries an adequate share of the market and better conditions of access for their exports and certain commitments to be assumed by importing countries in regard to purchase from exporting countries not parties to the Agreement. In any event, the attitude taken by the EEC and the United States in refusing to participate is quite incompatible with the commitments to support the negotiation of commodity agreements which they have accepted without reservations at various international meetings.

(iii) "It is recommended that consideration be given to the setting up of an Inter-Governmental Consultative Committee on Oilseeds, Oils and Fats."

This recommendation was examined by the FAO Study Group on Oilseeds, Oils and Fats, at its meeting in December 1968, but neither the Study Group itself nor the FAO Committee on Commodity Problems, which considered the question at its forty-third session, was able to reach agreement on the subject.

(iv) "Governments (are urged) . . . to give due consideration to the effort of producers of sisal, henequen and abaca to improve market conditions, . . . particularly in defending the indicative price ranges, established in current informal arrangements."

In this respect, a system of export quotas was subsequently introduced in the existing informal agreement on sisal and henequen (in force since the beginning of 1968). Moreover, minimum prices were established for sisal in June 1968, and to back up this decision, the over-all export quotas for 1969 were reduced 10 per cent compared with 1968. Although indicative prices were established for abaca, it was not considered necessary to introduce a quota system, since the bulk of world exports of this commodity comes from one country.

(v) "(It is recommended) that the Study Group on Jute and Allied Fibres should . . . explore the possibility of setting up an international buffer stock."

An Advisory Working Group was established by the Study Group to consider this recommendation and after examining several possible courses of action, it recommended the negotiation of an international arrangement based on the operation of buffer stocks located in the producing countries. This recommendation was subsequently supported by the Consultative Committee of the Study Group, which invited the three major producing countries to submit proposals on this point.

A summary of recent international action in connexion with commodities may be found in the document entitled "Review of international trade and development".[21] More detailed information on the evolution of the world commodity market and the national and international measures adopted is contained in the *Commodity Survey 1968*.[22]

(b) *Resolution 17 (II) on general agreement on commodity arrangements*

One of the provisions of the recommendation set forth in Annex A.II.1 of the first session of UNCTAD relates to achieving general agreement on commodity arrangements. At subsequent sessions of the Trade and Development Board no progress was made towards implementing this recommendation; hence in resolution 36 (V) the Board requested the Secretary-General of UNCTAD to prepare a draft general agreement for consideration at the second session of UNCTAD; no agreement was reached at New Delhi either. Consequently, resolution 17 (II) did nothing more than recommend that "the Secretary-General of UNCTAD (should) invite the Governments of member States of UNCTAD to make their comments on the secretariat's report,[23] concerning the substance and the form of a general agreement on commodity arrangements".

From the fifty replies received, three main impressions emerged: (1) the majority, consisting of socialist and developing countries, were in favour of the preparation and adoption of a general agreement, while the developed market economy countries which replied were either against it, or not in favour of adopting it immediately; (2) the great majority of countries were in favour of working out a set of principles and guidelines rather than a legal instrument of binding force; and (3) some of the Governments which were reluctant to proceed with the formulation of a general agreement immediately were nevertheless prepared to collaborate in such a task, should the majority be in favour. The report embodying the Governments' replies was examined by the Committee on Commodities at its third session in November 1968; the outcome of the debate was merely a reaffirmation of the views already expressed by the Governments. It became evident that all the developed market economy countries felt that the establishment of a working group to proceed with the preparation of a draft general agreement would be premature, and that the discussion should be deferred until agreement had been reached on important issues of principle which were still under discussion. A few Latin American countries shared this view, favouring the commodity-by-commodity approach and doubting the utility of a general agreement. The Committee therefore decided to continue the discussion at its fourth session.[24]

No decision was reached at the fourth session of the Committee on Commodities (May 1969), for the positions adopted at the previous session were merely stated again.

The last part of paragraph 14 of the Latin American Consensus refers to the negotiation of new commodity agreements and the broadening of their sphere of action. In this connexion, it must be pointed out that the negotiation of new commodity agreements has run into serious difficulties, a fact which is borne out by the long and hitherto unsuccessful course of the cocoa negotiations. The agreements negotiated after the first session of UNCTAD have been renewals of previous agreements (on tin, wheat, coffee and, more recently, sugar), although some of them (particularly the coffee and sugar agreements) now include provisions which broaden their scope considerably, especially in relation to production control and, in the case of coffee, to the diversification of production.

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[21] UNCTAD, TD/B/257/Add.1, 25 June 1969.

[22] United Nations publication, Sales No.: E.69.II. D.5, April 1969.

[23] UNCTAD, "A general agreement on commodity arrangements" (TD/30), 19 December 1967.

[24] See UNCTAD, *Report of the Committee on Commodities on its third session* (TD/B/202/Rev.1), paras. 66-73.

The moves to conduct negotiations which may eventually lead to the conclusion of commodity agreements have been spurred, in general, by the interest of a major exporting country or group of countries. In line with the principle of unanimity and solidarity which governs the internal discussions of the regional groups, these moves are at first supported by other countries; but when the time comes to discuss the specific terms of the agreements, there is a serious division of opinion which jeopardizes their success. For instance, in UNCTAD resolution 16 (II), bananas and cotton were included among the commodities on which prompt intergovernmental consultations were considered necessary in order to identify the problems facing each commodity, determine the techniques appropriate for dealing with them and agree on appropriate measures. And yet the idea of negotiating an international cotton arrangement has repeatedly been rejected by the International Cotton Advisory Committee, of which most of the cotton producers and exporters are members. At the third session of the FAO Study Group on Bananas, held in April 1969, it was also evident that the producing countries did not agree on what international action should be taken in the market for this commodity. Thus it may be concluded that, although the negotiation of international commodity agreements has been unanimously recommended at a number of meetings in the last few years, the idea does not yet find strong enough support to extend such negotiations to a broader range of commodities.

Moreover, even after an agreement has been concluded, there is still the problem of ensuring that the signatory countries faithfully carry out its provisions. The reference to the "commitments established by previous agreements" was inserted in the Latin American Consensus because of the problems encountered in the implementation of the International Wheat Agreement; in some of their transactions, certain exporting countries—mainly the United States and France—have disregarded the minimum prices laid down in the Agreement. In September 1968, representatives of the five major exporting countries parties to the Agreement put forward a proposal to include other grades of wheat in the minimum and maximum price ranges and to improve the procedures for revising the freight rates used in calculating prices. According to authorized sources, however, the Governments of Canada and Argentina have both registered complaints regarding the prices quoted by the United States in recent bids submitted to Colombia and Brazil, which they consider to have been lower than the prices established in the International Grains Arrangement. Aside from the question of the United States prices, Argentina has presented a formal protest because of the exclusion from the Arrangement of sales on a three-year credit basis, which the United States regards as a stimulus in areas such as Latin America, which is a traditional buyer of Argentine wheat.[25] Subsequently, wheat export prices were slashed even further, which rendered the minimum prices established in the Arrangement practically ineffective, particularly after the cuts made by the United States on 18 July and 26 August 1969. Although the United States appealed to other wheat exporters to avoid a price war, there is some fear that the Arrangement may collapse in view of the rapid increase in surpluses.[26]

> "To revise and request the modification or abolition of policies which encourage uneconomic production of primary commodities and prejudice the sale of Latin American products in world markets, and a periodic review of these policies."[27]

Part II, paragraph 5, of recommendation A.II.1 adopted at the first session of UNCTAD establishes that: "Developed countries, in formulating and implementing their domestic policies affecting trade in primary products, should not take measures which stimulate in their countries uneconomic production in such a way as to deprive developing countries of the opportunity to obtain a fair and reasonable share of world markets and market growth. Where existing levels of protection have adverse effects upon the trade and trade opportunities of developing countries, developed countries should aim to modify the form or reduce the aggregate of such protection."

During the four years between the first and second sessions of UNCTAD no progress was made towards implementing this recommendation. According to their statements at the second session, the developed countries might even be said to have adopted a still more intransigent attitude, since it was not even possible to agree on a draft resolution which simply reaffirmed the validity of the principles approved at the first session. Experience of the successive tariff negotiations conducted by GATT, and particularly the Kennedy Round, has shown that the problems deriving from protectionist policies for agriculture are the most difficult to solve because of the complex of economic and social factors influencing agricultural policy in developed countries.

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[25] *Economic Survey*, vol. XXV, No. 1173 (Buenos Aires, 25 February 1969), p. 8.

[26] See "U.S. makes cuts in wheat prices", *International Review Service* (Washington, D.C., 1 September 1969).

[27] *Latin American Consensus*, op. cit., para. 15.

The most important step hitherto taken towards initiating talks at the international level on the problems connected with trade in agricultural commodities and with protectionist policies is the decision adopted by GATT at its twenty-fourth session (November 1967) to set up an Agriculture Committee "to examine the problems in the agricultural sector, and to explore the opportunities for making progress in the attainment of the objectives of the General Agreement in the agricultural field. The examination would cover all agricultural products important in international trade. This examination should prepare the way for subsequent consideration of positive solutions which could be mutually accepted by all contracting parties concerned. It would bear on all relevant elements of agricultural trade and production policies".[28]

In compliance with these terms of reference, the GATT Agriculture Committee adopted a programme of work consisting of three stages: (1) preparation of all the basic information; (2) identification of the principal problems; and (3) discussion of the means whereby mutually acceptable solutions could be achieved. It selected for examination a list of commodities which included grains, meat, dairy products, fruit and vegetables, oilseeds and vegetable oils, tobacco and wine. At a meeting in October 1968, the Committee agreed that the preparatory stage of its work had been completed and that it would proceed with the second stage in accordance with two main lines of action: first, to examine the structure of international markets for the commodities selected, in order to ascertain the trends in international prices, quantities traded and the relative importance of free and regulated markets and non-commercial transactions; and secondly, to examine the motivations and general orientation of production policies. The Committee will continue with the second stage of its work at meetings scheduled for the end of 1969.

It is clear, however, that the examination and discussion of the problems of agricultural protectionism within the GATT Agriculture Committee in no way prevent the United States from participating in similar studies and discussions at the inter-American level referring to specific products of export interest to Latin American countries.

> "To make joint efforts to eliminate, within the near future, discriminatory preferences militating against the sale of Latin American primary commodities in the markets of certain developed countries, and to suggest measures or actions which will enable and encourage developing countries favoured by those preferences to give them up."[29]

All the States members of UNCTAD adopted without dissent the recommendation contained in Annex A.II.1 of the Final Act of the 1964 session of the Conference to the effect that the special preferential arrangements existing between certain developed countries and certain developing countries should be abolished *pari passu*. Between the first and the second sessions of UNCTAD, however, no progress was made towards abolishing special preferences; quite the reverse—the EEC entered into new special arrangements with other developing countries.

The Charter of Algiers expanded the principle to include recognition of the fact that, in the case of certain commodities, the special preferences in force could be reduced or even abolished through international agreements. Nevertheless, owing to the attitude of the developed countries that maintain such preferences, it was not possible to reach agreement on the matter at the second session of UNCTAD, which did not even confirm the commitment accepted in recommendation A.II.1 and in the Charter of Algiers.

The EEC countries have argued that the special preferences they grant to certain developing countries and the reverse preferences they receive from these countries are compatible with the objectives and regulations of the General Agreement since they are based on the articles covering the establishment of free-trade areas. Other countries, however, have disputed this interpretation on the grounds that the Yaoundé Convention (which is the legal basis for some of these special arrangements) does not establish a free-trade area since it does not cover trade among the eighteen developing signatory countries; the EEC countries have rejected this argument, saying that there are eighteen free-trade areas rather than just one, each comprising one developing country and the EEC countries. This and other points of disagreement have meant that discussions within GATT have been inconclusive, and the topic has been kept on the agenda for GATT's annual meetings.[30]

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[28] GATT, COM.AG/2, 12 January 1968.

[29] *Latin American Consensus*, op. cit., para. 16.

The continued existence and the proliferation of such discriminatory preferential arrangements have created conflicts of interest among various groups of countries. Within the developed group, the conflict arose out of discrimination against the exports of certain developed countries in the markets of the developing countries enjoying special preferences, as a result of what are known as "reverse preferences". The scale of this conflict of interest is apparent from the fact that the United States has made its participation in the generalized system of preferences for the manufactures and semi-manufactures of developing countries conditional upon the abolition of reverse preferences. Among the developing countries, too, conflicts of interest are becoming broader in scope as the beneficiaries of the present system gradually expand and consolidate it, even going so far as to propose increasing the margins of preference in their favour. The Conference of the Group of 77 (Algiers, October 1967) was unable to achieve a satisfactory solution to the problem, and merely adopted a compromise, requesting the Secretary-General of UNCTAD to undertake studies, commodity-by-commodity and country-by-country, on the effect of the abolition of the special preferences in force and the steps necessary to ensure that countries which at present enjoy such preferences receive advantages at least equivalent to the losses resulting from the abolition. The principle of equivalent advantage was noted in the recommendation on this topic adopted at the first session of UNCTAD. In addition to this principle, the Charter of Algiers recognized that, in the case of certain commodities, the special preferences in force could be reduced or even abolished by international agreement. However, owing to the attitude of the developed countries that maintain this kind of preference, no agreement could be reached on the subject at the second session of UNCTAD, and it was not even possible to reaffirm the commitments accepted by the developed countries in UNCTAD recommendation A.II.1 and recalled in the Charter of Algiers.

The attitude of the African countries participating in these special arrangements with the EEC has not been very consistent. On the one hand, they have maintained a conciliatory position within the Group of 77 and have continued to express their willingness to abolish special preferential arrangements gradually once they are granted equivalent advantages; on the other hand, however, in their relations with EEC they are not only maintaining that they need to continue to enjoy special preferences, but they are even calling for larger margins of preference and the introduction of quantitative restrictions on imports by the EEC from third countries. This attitude is tantamount to disregarding the agreement reached in the Charter of Algiers. The operation of the International Coffee Agreement, for example, has provided African coffee-exporting countries with certain equivalent advantages in the form of price levels higher than those prevailing before the Agreement, and also a greater share in world coffee exports through the system of export quotas. There was tacit recognition of these advantages when the signatories of the International Coffee Agreement undertook, in line with article 47 of the Agreement, to take steps to eliminate obstacles to the sale and consumption of coffee, with specific reference to the discriminatory tariffs existing in certain countries. In other words, coffee is a commodity in respect of which—in the terms of the Charter of Algiers—special preferences could be abolished. Similarly, the basic framework already agreed upon for an international agreement on cocoa, i.e., a system of export quotas, a scale of floor and ceiling prices and the establishment of an international buffer stock, do supply an appropriate basis for agreement on the abolition of the preferences covering cocoa. This latter point, however, is one of the obstacles that are still standing in the way of final negotiation of the agreement.

In the case of other commodities, bananas, for instance, which are of key importance in the exports of several Latin American countries, a number of different solutions have been proposed, for example, the gradual reduction of the EEC common external tariff side by side with the reduction of the duty-free quota allowed by the Federal Republic of Germany, leading to the abolition of both after a certain time.

The recently concluded negotiations on the renewal of the Yaoundé Convention did not appreciably diminish the magnitude of the problem of special preferences, despite the fact that—according to advance information—the common external tariff relating to coffee and cocoa, and consequently the margin of preference, were reduced.

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[30] See GATT, *Basic Instruments and Selected Documents, Fourteenth Supplement.*

The attitude of the United States towards these discriminatory preferential arrangements may be a decisive factor if it is expressed in terms other than those mentioned above, i.e., if it does not make its participation in the generalized system of preferences for manufactures and semi-manufactures conditional upon the abolition of special and reverse preferences. A more positive attitude would be for the United States and other developed countries that do not participate or no longer wish to participate in special preferential arrangements to agree to establish the generalized system of preferences in favour of all the developing countries that do not discriminate against them, leaving the door open for the developing countries excluded to join at a later stage, once they abolished or agreed to abolish discriminatory preferences by a specified date. Also worth considering is the formula proposed by Denmark in the European Free Trade Association in 1965, under which the generalized system of preferences for manufactures would enter into force for all the developing countries, with the proviso that preferences would be withdrawn after a given period, from any countries that were continuing to participate in discriminatory preferential arrangements. If the United States were to adopt either of these positions, it would certainly strengthen the position of the Latin American countries in this respect.

> "To demand the effective operation of consultative machinery with regard to the sale of surpluses and the disposal of reserves, which should respect the general principles already accepted in this field, and also prevent the distortion which takes place in Latin American trade flows as a result of AID-tied loans and the haphazard sale of surpluses."[31]

The Declaration of the Presidents of America referred to this point in the following words: "The Presidents of the Member States of the OAS agree . . . to strengthen the system of intergovernmental consultations and carry them out sufficiently in advance, so as to render them effective and ensure that programmes for placing and selling surpluses and reserves that affect the exports of the developing countries take into account the interests of the Latin American countries".[32] This concern for improving the operation of the system of consultations on the disposal of surpluses and reserves stems from the shortcomings observed in countries' compliance with the Principles of Surplus Disposal recommended by FAO in 1954 and the notification system laid down by GATT in a resolution adopted in March 1955. As early as 1964, the Chairman of the GATT Interim Co-ordinating Committee for International Commodity Agreements stated in his Report to the Contracting Parties that discussions within the Committee had led to the conclusion that improvements to the existing arrangements might be made in a number of ways, including: (*a*) An extension of the time required for prior notice of intention to liquidate strategic stocks; (*b*) More definitive arrangements for consultation with the intergovernmental group or council concerned with the commodity; and (*c*) Development of some relationship between the time of disposal and market conditions.[33] However, it has only been more recently that decisions have been taken to examine the nature of current problems. For example, at its forty-third session the FAO Committee on Commodity Problems agreed to set up a Working Group to examine the role and terms of reference of the Consultative Committee on Surplus Disposal to consider ". . . in the light of developments in the nature and extent of extra-commercial transactions having an impact on commercial trade, what action on the part of member countries subscribing to the FAO Principles of Surplus Disposal . . . should be regarded as meeting their consultative obligations".[34] Virtually simultaneously, the Contracting Parties of GATT at their twenty-fifth session (November 1968), approved a proposal by the Director-General which noted that if future discussions by the Contracting Parties on the disposal of commodity surpluses were to be of more than a purely descriptive and historical nature, it would be useful and desirable that the notification and consultation procedures under the Resolution of 4 March 1965 be fundamentally revised. The Contracting Parties in consequence requested the GATT Agriculture Committee to consider appropriate procedures for the notification, consultation, and discharge of responsibilities incumbent on Contracting Parties with respect to the disposal of surpluses and to report to the Council on the means whereby the existing procedures could be improved.[35]

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[31] *Latin American Consensus*, op. cit., para. 17.

[32] OAS, *Meeting of American Chiefs of State*, op. cit., p. 70.

[33] See GATT, "Report of the Chairman of ICCICA" (L/2812).

[34] See FAO, *Report of the Committee on Commodity Problems on its Forty-third Session* (CCP/68/19).

Upon completion of the task assigned to it, the Working Group established by the FAO Committee on Commodity Problems submitted a report in which it ". . . recognized that important developments had occurred in the scope and nature of near-commercial and extra-commercial transactions. According to the Group, "more commodities were affected by problems of surplus or over-abundant supplies, and a larger number of countries were involved. Stocks of some commodities were again very heavy following a temporary reduction in the mid-sixties, when there had been an exceptional rise in demand. For some commodities, part of the supplies entering extra-commercial transactions now came from current production rather than from stocks. Also, there were increasing shipments of agricultural commodities in the 'grey area' between normal commercial trade and food aid". The Working Group considered that a pragmatic approach should be made to the revision of procedures for notification and consultation and that the concept of surplus disposal should give way to an approach identifying the types of non-commercial transaction to which the procedures should apply. The Group itself drew up a tentative list of the different types of transaction.[36]

As regards the Latin American countries, the problems raised by the disposal of United States surpluses and reserves are connected mainly with sales of wheat; some of the points made above in connexion with paragraph 14 of the Latin American Consensus have to do with this topic. There are also, however, similar problems with other commodities: cotton, milk products, and vegetable oils and fats.

> "To review bilateral and multilateral food aid systems, with a view to considerably expanding multilateral programmes on the basis of the principles approved in CECLA resolution 9/68M."[37]

The principles contained in the CECLA resolution are the following: (*a*) That food aid should be an interim measure and complement other forms of aid; (*b*) That it should be provided in such a way as not to affect the productive capacity of the recipient country or the trade flows of other developing countries; (*c*) That it should not be used as a justification for subsidizing inefficient production nor to encourage the building up of surpluses in the developed countries; (*d*) That it should include measures for the purchase of food-stuffs in exporting developing countries; and (*e*) That new methods of multilateral assistance should be introduced to promote the gradual establishment of trade flows among the developing countries.

The problems caused by systems of food aid are closely linked with the question of the disposal of surpluses and reserves considered above. For most of the past fifteen years, food aid furnished in the main by the United States to various countries has basically been a means of disposing of a large volume of surplus production on the world market, the surplus being the result of policies to support United States domestic prices. Without underestimating the benefits that food aid can have for the recipient countries, it must be recognized that it has caused several problems, both in the recipient countries themselves (by making the need for reforms to increase the efficiency of agriculture less urgent or by removing incentives to domestic production) and in other developing countries which export food-stuffs, whose exports have inevitably been affected by the rapid increase in the number of transactions under special food aid concessions.

In recent years, with the gradual decrease in United States agricultural surpluses, some changes have occurred in the system of food aid that have made it correspond more specifically to the notion of "aid" and less to that of a mechanism for disposing of surpluses that are expensive to store. This is clear from the amendments to United States Public Law 480, under which over a period of five years (1967-1971) the system of payment would be gradually changed from payments in local currency to payments in dollars or other convertible currencies, with extended repayment periods and low interest rates. While payments in local currency have not been completely abolished, they have been limited to very special cases and the funds accumulated may be used to promote trade among developing countries. Another innovation is that higher priority has been placed on aid furnished in the form of implements and other agricultural inputs

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[35] See GATT, "Disposal of Commodity Surpluses: Note by the Director-General" (L/3109/Rev.1).

[36] See FAO, *Report of the CCP Working Group on CSD functions* (CCP/69/13/1).

[37] *Latin American Consensus*, op. cit., para. 18.

(chiefly fertilizers), as a means of helping to raise the productivity of the agricultural sector in developing countries. However, probably the most significant change in recent years has been the gradual multilateralization of food aid, exemplified by the Food Aid Convention, which was negotiated at the same time as the International Wheat Agreement of 1967. Although the initial target (a multilateral fund of 10 million tons per year) was eventually reduced to only 4.5 million tons of wheat or its equivalent, the Convention has certain features that distinguish it from the older arrangements for aid. First, it covers both exporting and importing countries, thus making food aid no longer exclusively dependent on the supplies of countries with surpluses; secondly, it also covers an exporting developing country, which thus is able to participate in providing aid to developing countries at a comparatively lower level of development; and thirdly, it provides that contributions to the aid fund may be in cash or in kind, thus making it possible for some purchases to be made from the most economical sources of supply, including other developing countries.

The Declaration on the world food problem (Declaration 9 (II)),[38] adopted at the second session of UNCTAD, defined the principles and objectives that should guide the actions of both developed and developing countries in regard to the world food problem. It urged the developing countries to pay special attention, in the formulation of their development plans, to the requirements of the agricultural sector, taking account of the food situation and of the important role of this sector in over-all development; to remove impediments to increased agricultural production; to carry out, wherever appropriate, reforms in the systems of land tenure; to promote the establishment and expansion of co-operative organizations to improve the production and marketing of food-stuffs; and to promote adequate pricing policies designed to attain the maximum degree of production as well as the appropriate level of efficiency. With regard to the action to be undertaken by the developed countries, the Declaration restates the principles contained in CECLA resolution 9/68M, *inter alia*:

> "To stress the urgent need to put into effect, within the specified periods, and in accordance with the timetable of scheduled meetings, a general, non-reciprocal and non-discriminatory system of preferences to facilitate the exportation of manufactures and semi-manufactures from the developing countries. Within this framework, measures should be considered which will allow the relatively less developed countries to make full use of the ensuing advantages."[39]

Resolution 21 (II) of the second session of UNCTAD recognized that there was "unanimous agreement in favour of the early establishment of a mutually acceptable system of generalized non-reciprocal and non-discriminatory preferences which would be beneficial to the developing countries".[40]

The objectives of the system, including special measures in favour of the least advanced among the developing countries, are to be: (*a*) to increase the export earnings of the developing countries; (*b*) to promote their industrialization; and (*c*) to accelerate their rates of economic growth. To this end the Special Committee on Preferences was established as a subsidiary organ of the Trade and Development Board, and requested to hold its first meeting in November 1968, and a second meeting in the first half of 1969 to draw up its final report to the Trade and Development Board. The aim was to settle the details of the arrangements in the course of 1969. The resolution ended by noting the hope expressed by many countries that the arrangements should enter into effect in early 1970.

The first session of the Special Committee on Preferences was held, as scheduled, towards the end of 1968; the Committee was unable, however, to fulfil its purpose of considering the progress made towards the implementation of UNCTAD resolution 21 (II), since, in fact, no progress had been made. The developed countries had still not made sufficient headway in their discussions to be able to define some of the points on which agreement had not been reached at the New Delhi Session of UNCTAD, particularly as regards the lists of products which in some cases would be included in and in others excluded from the system of preferences. Thus, the discussion in the Special Committee never went beyond generalities, and the only outcome was the confirmation by the developed countries that they would respect the agreed timetable. It was also announced that the developed countries had agreed to submit their indicative lists of products by 1 March 1969 at the latest, but it was not yet known how long it would take OECD to consider those lists. It was also agreed to hold a short session of the Committee in April 1969, essentially with a view to reaching agreement on the procedure for handling detailed intensive consultations with the developing countries, which would begin at the third session in late June 1969.[41]

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[38] *Proceedings of the United Nations Conference on Trade and Development, Second Session*, op. cit., vol. 1.

[39] *Latin American Consensus*, op. cit., para. 19.

[40] *Proceedings of the United Nations Conference on Trade and Development, Second Session*, op. cit., vol. 1.

The second session of the Special Committee was held between 28 April and 2 May 1969. It was announced that many developed countries had submitted indicative lists of products and that some progress had been made in examining those lists; the countries which had not yet submitted lists would do so in the near future. The developing countries expressed unanimous concern at the delay in the submission and discussion of the lists as it affected fulfilment of the timetable for the work of the Special Committee. The representative of one developed country which had not yet submitted its indicative lists said that his Government was currently conducting a thorough review of its trade policy, including, but not limited to, the question of generalized preferences, but since that review had not yet been completed it was not possible to give a definitive statement of his Government's position. He stated, however, that his Government was considering the problem and that he would inform the Committee as soon as a decision had been reached. The statements made by representatives of other developed countries revealed that, although these countries intended to continue discussion of the problems connected with the system of general preferences, the stage of substantive debate on many of those problems had still not been reached. On the question of the procedure for consultations between developed and developing countries, the Special Committee agreed to set up a working group to initiate consultations on the technical aspects of the rules for the origin of goods, but postponed setting up working groups on other aspects of the system, owing to the absence of substantive documentation from the prospective preference-giving countries.[42]

Delay in the submission of the indicative lists of products again restricted the scope of the debate at the third session of the Special Committee (30 June to 3 July 1969). The spokesman for the developed countries said that, although OECD had received additional lists, that of the United States would not be submitted until some time in July; the developed countries would then embark on an exchange of views and on preparation of the substantive documentation to be examined by the OECD Trade Committee, scheduled to meet towards the end of October. The developed countries announced their intention of transmitting the documentation to the UNCTAD secretariat by 15 November 1969 at the latest. The spokesman for the developing countries, on the other hand, said that they would require approximately two months to study and evaluate the offers made by the developed countries. Consequently, the Secretary-General of UNCTAD was authorized to fix the time of the fourth session of the Special Committee at a later date. Lastly, the Secretary-General was also authorized—following prior consultations with the Bureau of the Committee, and as and when substantive documentation was received—to convene such working groups as might be necessary to study aspects connected with product coverage, extent of preferences, safeguard mechanisms, duration of the scheme, special measures for the least advanced countries, problems of existing special and reverse preferences, institutional arrangements and measures to be taken by the socialist countries.[43]

As can be seen from this summary of the work done by the Special Committee on Preferences during the three sessions that have so far been held, the substantive debate on the machinery and characteristics of the generalized system of preferences has not yet begun, and it has not been possible to follow the timetable laid down in UNCTAD resolution 21 (II), i.e.:

> "In accordance with a timetable jointly drawn up, to eliminate restrictions on imports of manufactures and semi-manufactures of interest to Latin America, in close connexion with the system of general preferences. To give particular attention in this matter to the problems of applying escape clauses, which requires the establishment of suitable criteria and consultative machinery. To avoid the applications of discriminatory practices of any kind in this respect."[44]

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[41] See UNCTAD, "Report of the Special Committee on Preferences on its third session" (TD/B/218).

[42] See UNCTAD, "Report of the Special Committee on Preferences on its second session" (TD/B/243/Rev.1), May 1969.

[43] See UNCTAD, "Report of the Special Committee on Preferences on its third session" (TD/B/262).

[44] *Latin American Consensus*, op. cit., para. 20.

Because of the priority given to the negotiations for the establishment of a generalized system of preferences, the more general problems connected with the elimination of restrictions on imports from those countries have been pushed into the background. Nevertheless, given the temporary nature of the proposed system of preferences, it is obvious that efforts must be continued to liberalize exports of manufactures from the developing countries to the greatest extent possible, particularly in respect of those products which do not come under the system. International action in this field is being carried out principally through the GATT Committee on Trade in Industrial Products, based on a work programme calling for: (*a*) the preparation of an inventory of non-tariff barriers, based on information supplied by Governments; and (*b*) an objective analysis of the tariff situation as it will be when all the Kennedy Round concessions have been fully implemented. According to the Committee's terms of reference the aim of these studies is to explore new opportunities of making progress towards trade liberalization. In this connexion, it should be pointed out that the Contracting Parties of GATT . . . "reaffirm their intention fully to implement the results of the Kennedy Round and to pursue rapidly the intensified Programme of Work initiated at the twenty-fourth session, designed to make practical progress towards increasingly liberal trade policies and practices including the necessary negotiations at the appropriate stages. Moreover, in view of the continuing decline in the developing countries' share of international trade and the urgent need for a substantial growth in their export earnings, the Contracting Parties note that there is need to give priority consideration to, and to take immediate steps towards solving, the trade problems of these countries".[45]

It is, however, obvious that, while the GATT Committee on Trade in Industrial Products is continuing its work, steps could be taken towards agreeing, in conjunction with the United States, on a timetable to eliminate existing restrictions on imports of goods from Latin America. The establishment of machinery for consultation and negotiation at the inter-American level would facilitate the task of identifying existing restrictions and negotiating conditions for their immediate or gradual elimination. Such machinery could also solve the problems of the procedures, scope and characteristics of escape clauses, and regulate their application. Although it is probable that the use of escape clauses will be properly regulated within the generalized system of preferences, it would be necessary in any event to define the criteria and rules for the application of such clauses within the specific context of inter-American trade.

The reference to the need to avoid discriminatory practices relates to discrimination by the United States, where imports of crude petroleum from certain Latin American countries are subject to quotas, whereas imports from other sources are not.

> "In conjunction, to single out industrial sectors or branches wherein the adoption by the United States, within a suitable period, of measures to change some production structures, can help to improve and expand the United States market for manufactures and semi-manufactures of special interest to Latin America. The effects of these measures should be periodically assessed."[46]

Both the establishment of a generalized system of preferences in respect of manufactures from developing countries and the measures which the United States could adopt to eliminate existing restrictions on imports from Latin America would go only a short way towards facilitating the expansion of exports from the Latin American countries unless, at the same time, the developed countries, and particularly the United States, take steps to modify their production structure so as to alleviate the problems arising out of the growing volume of imports from developing countries. In pointing to the need to single out, in conjunction, industrial sectors or branches in which measures could be adopted to promote changes which might contribute to broadening the market for Latin American exports, an attempt is being made to prevent the possible subsequent introduction of restrictions based on the concept of "market disruption", which has become so common in recent years.

The application of restrictions based on the concept of market disruption by some member countries of GATT and the difficulties caused to other countries thereby led the Contracting Parties, by a decision of 19 November 1959, to set up a Working Party on Avoidance of Market Disruption, which was given the task of studying these problems. However, the report drawn up by the Working Party did not provide solutions acceptable to the countries concerned, and the Working Party was dissolved. Subsequently, the GATT Committee on Trade and Development agreed to establish a "Group of Experts on Adjustment Assistance Measures", which was instructed, *inter alia*, "to report on the measures being applied, or proposed to be applied, by industrialized countries for assisting adjustments in the changing structure and pattern of production, so as to permit an expansion of international trade in products of interest to less developed countries and to provide larger opportunities for imports from these countries".[47] Thus, in the examination of these problems, the focus shifted from consideration of measures to regulate the application of restrictions based on "market disruption" to consideration of adjustment assistance measures to be taken by developed countries with a view to expanding the trade opportunities of the developing countries.

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[45] See "Review of the twenty-fifth session of Contracting Parties to the General Agreement" (GATT/1038), p. 4.

[46] *Latin American Consensus*, op. cit., para. 21.

Perhaps the best illustration of the purpose of paragraph 21 of the Latin American Consensus is to be found in the various restrictions which the developed countries, including the United States, continue to impose on imports of cotton textiles now coming under the quota system of the Long-Term Arrangement Regarding International Trade in Cotton Textiles. The maintenance of those restrictions and the steps taken by the United States to broaden their scope by extending them to cover wool and synthetic fibres, seem to indicate that that country is more inclined to impose restrictions than to adopt measures to facilitate the process of adjustment of industries affected by external competition.

This may be due, at least in part, to the fact that the conditions laid down by the United States Trade Expansion Act of 1962 for providing rapid and substantial aid to firms and workers affected by increases in imports were too rigid, with the result that not one of the petitions for such assistance was approved. In fact, the Act required proof: (*a*) that tariff concessions are the major cause of the increased imports, and (*b*) that such increased imports have been the major factor in causing the alleged damage or injury. Since it is impossible to prove a connexion between tariff concessions, increased imports and the damage occasioned, it was concluded that reforms to the existing legislation were required. In this connexion, the report "Future United States Foreign Trade Policy" proposes that the only criterion for adjustment assistance to workers should be that increased imports are the cause of economic difficulty or injury, thus eliminating the requirement of proof that tariff concessions are the major cause of increased imports. The report also suggests that not only should assistance be provided to firms or workers already affected by increased imports, but that methods be devised to avert dislocation and unemployment before they occur.[48]

In contrast to the inapplicability of the adjustment assistance measures referred to in the Trade Expansion Act, mention may be made of the provisions of the 1965 Act on products of the motor vehicle industry, which laid down various forms of aid, over a period of three years, to firms or workers affected by the Agreement concluded with Canada in 1965, under which most petitions for assistance submitted by the sectors concerned were approved.

"By means of greater technical and financial co-operation, to make national and regional machinery for promoting exports stronger, broader and more flexible, systematizing Latin American trade information and seeking the collaboration of official and private bodies in the United States in order to intensify and diversify Latin American exports, and also to facilitate the supply of regional markets from regional resources."[49] In the Declaration of the Presidents of America, the Presidents of the member States of the OAS agreed ". . . to put in operation as soon as possible an inter-American agency for export promotion that will help to identify and develop new export lines and to strengthen the placing of Latin American products in international markets, and to improve national and regional agencies designed for the same purpose".[50] In pursuance of that recommendation and of the recommendation adopted in the Action Plan of Viña del Mar approved by IA-ECOSOC in June 1967, the Inter-American Centre for Export Promotion was set up a few months later, with financial support from the member countries of the inter-American system. The report on the first year of work of the Centre was submitted to the Sixth Annual Meetings of IA-ECOSOC at the Expert and Ministerial Levels (Port-of-Spain, June 1969), which lists the tasks carried out in the fields of technical assistance, export promotion, market analysis and documentation.[51]

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[47] GATT (COM.TD/H/2, 8 July 1965), p. 1.

[48] See "Future United States Foreign Trade Policy", Report to the President submitted by the Special Representative for Trade Negotiation (Washington D.C., 1969), p. 43.

[49] *Latin American Consensus*, op. cit., para. 22.

[50] OAS, *Meeting of American Chiefs of State*, op. cit.

In recent years, increasing attention has been paid to the systematization of work connected with export promotion, because it was recognized that exports are essential if advantage is to be taken of the new trade opportunities that may arise as a result of international action in favour of the developing countries. Progress at the international level has been achieved mainly through the initiatives and programme of work of the UNCTAD-GATT International Trade Centre, whose work in the Latin American sphere has been strengthened by the support of the above-mentioned Inter-American Centre. At the national level, the institutionalization of export promotion schemes has taken diverse forms in the Latin American countries, as regards both the organization and the effectiveness of programmes. The secretariat of the Latin American Free Trade Association (ALALC) published a short report[52] giving basic information on current export promotion programmes in several countries in the region. At the same time, the ECLA secretariat, in co-operation with the UNCTAD-GATT International Trade Centre, has organized courses on export promotion in various Latin American countries, and others are planned for the near future.

> "To underline the importance of active support from the United States for Latin America's position *vis-à-vis* other areas, as agreed upon in the Declaration of the Presidents of America. The fulfilment by the United States of the agreements it has entered into will considerably strengthen the value of this support."[53]

Under chapter III of the Declaration of the Presidents of America, the member States of the OAS bound themselves to make individual and joint efforts to improve international trade conditions in Latin America and to act in co-ordination in multilateral negotiations to achieve the objectives set forth in the agreements and recommendations adopted by the developed countries in favour of the developing countries.

The active support of the United States would undoubtedly strengthen Latin America's position *vis-à-vis* other regions in its efforts to negotiate a solution of the problems of its trade with them. The United States and Latin America are in full agreement in some areas, e.g., in their views on the effects of EEC's common agricultural policy on trade with third countries and in their desire to eliminate special and reverse preferences, both fields in which joint and co-ordinated action by the member States of the OAS would make an effective contribution towards achieving a solution that would prove satisfactory to all the interested countries. On the other hand, as is rightly pointed out in the Latin American Consensus, the fulfilment by the United States of its own commitments will not only considerably strengthen the value of that country's support, but in many cases will be the factor that will decide the action to be taken by the other developed countries.

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[51] See the *Report of the Executive Director of the Inter-American Export Promotion Centre* (CIES/1370).

[52] ALALC, *"Regímenes de fomento a las exportaciones en los países de América Latina"* (CEP/Repartido 1107).

[53] *Latin American Consensus,* op. cit., para. 23.

EXPORT PROMOTION IN JAPAN AND ITS APPLICATION TO LATIN AMERICA

INTRODUCTION

In 1968, the value of Japanese exports amounted to 12,780 million dollars, roughly equivalent to the Latin American figure for the same year. Fifteen years earlier, Japanese exports had amounted to barely 1,275 million dollars, that is, less than a third of the Latin American figure (5,990 million dollars). Therefore, while Latin American exports doubled in value, the value of Japanese exports increased more than tenfold, the cumulative annual growth rate being 16 per cent.

At the same time, the composition of Japanese exports underwent rapid changes: the share of textiles and food-stuffs in total exports dropped from 46 to 20 per cent, while that of machinery rose from 15 to 42 per cent in the period 1953 to 1967. Thus, there was a fairly rapid shift towards heavy industrial products at the expense of light industry.

The aim of the present report is to examine the factors and policy which were responsible for the remarkable growth of Japanese exports and the change in their composition, from the point of view of the interests of the developing countries, Latin America in particular. In the last part of the report the dynamic experience of Japan is used as a basis for a provisional examination of the practical possibilities of adopting similar policies and measures in the Latin American countries, with a view to facilitating the growth and diversification of their exports, particularly exports of manufactures.

CHAPTER I

THE MAIN REASONS FOR THE GROWTH OF EXPORTS

A. DEVELOPMENT OF JAPANESE EXPORTS

The cumulative annual growth rate of Japanese exports—16.2 per cent over the fifteen years, 1953-1968—is very high, compared with both Japan's rate during the long period prior to the Second World War and the corresponding rates of other industrialized countries. For the same fifteen-year period, growth rates were recorded of 5.6 per cent in the United States, 5.1 per cent in the United Kingdom, 8.3 per cent in France, 13.6 per cent in Italy and 12.1 per cent in the Federal Republic of Germany. The Japanese increase was double the average for the developed countries and two and a half times the average for world exports during the period considered (see table 1). On the other hand, the cumulative annual average growth rate of Japanese exports before the last war was approximately 6 per cent, and has always been greater than the growth rate of the other industrialized countries since the penultimate decade of the nineteenth century.[1]

An analysis of the development of Japanese exports by commodities (see Annex, table A) reveals the following salient features, which are closely related to the factors that contributed to the rapid growth of exports:

(*a*) During the period 1957-1967 exports of machinery and transport equipment showed the greatest increase, with a cumulative annual growth rate of 21.9 per cent, followed by metals and manufactures of metal (19.0 per

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[1] Though this report deals with exports of Japanese manufactures during the fifteen years from the mid-1950s to the end of the 1960s, exports for the period prior to the Second World War and for the early post-war years (up to mid-1950s) are also of great interest. Information on these periods—presented with a different slant from the information in the present report—can be found in a document submitted to the first session of UNCTAD: "Export of Manufactures and Industrial Development of Japan", prepared by H. Kanamori (E/Conf.46/P.12), March 1964.

Table 1

EXPORTS OF THE PRINCIPAL DEVELOPED COUNTRIES

	Average 1952-54	*Average 1967-69*	*Index (1953 = 100)*	*Cumulative annual growth rate*
	(millions of dollars f.o.b.)		*(percentages)*	
Japan	1 392	13 152	944.8	16.2
United States	15 234	34 295	225.1	5.6
United Kingdom	7 250	15 195	209.6	5.1
EEC	14 547	65 340	449.2	10.5
France	3 930	12 931	329.0	8.3
Italy	1 511	10 261[b]	679.1	13.6
Federal Republic of Germany	4 546	25 210	554.6	12.1
Developed countries[a]	53 333	170 367	319.4	8.1
WORLD TOTAL	74 667	214 533	287.3	7.3

SOURCE: United Nations, *Monthly Bulletin of Statistics*, March 1961 and April 1970.

[a] Australia, Canada, Japan, New Zealand, South Africa, United States, countries of Western Europe.

[b] Estimated.

cent) and chemicals (18.4 per cent). Exports of all these products grew even more rapidly during the second half of the period under review. The average annual increase for machinery and transport equipment rose from 17.9 per cent in the first half of the period to 26.1 per cent in the second, while the corresponding figure for metals and manufactures of metal rose from 16.8 to 21.2 per cent, and for chemicals, from 14.4 to 22.6 per cent.

(*b*) The greatest increases in exports were recorded for the following groups of products: (i) capital goods showed the highest and most sustained increase throughout the period, in particular power-generating machinery, metal working machinery, textile machinery, construction and mining machinery, and ball and roller bearings, electric generators, etc.; (ii) durable consumer goods, such as television sets and radios, tape recorders, motor cycles, cameras and other optical instruments, also showed a rapid increase, but the absolute value of exports of most of these goods was very low at the beginning of the period; thus, although there was a rapid increase in exports during the first half of the period, the really massive increase came later. Motor vehicles followed a very similar trend; (iii) there was also a rapid increase in exports of some intermediate products and industrial materials such as iron and steel, plastics, synthetic fibres and nitrogenous fertilizers.

(*c*) On the other hand, the rate of increase for exports of the principal products of light industries was less rapid, less than 10 per cent (8.6 per cent for foodstuffs and 5.9 per cent for textiles).

Since the exports of the different products did not grow at the same rate there was a radical change in the composition of exports, which may be summed up as a shift towards the products of the heavy and chemical industries, a shift that will be discussed later.

At this point it would be well to mention the change that has taken place in the geographical distribution of exports. The trend of exports to the developed countries has always been more dynamic than exports to the developing countries, with cumulative annual growth rates for the period 1957-1967 of 18.2 and 11.0 per cent, respectively. Consequently, the share in total Japanese exports of exports destined for the developed countries increased from 39.2 to 51.8 per cent; while the corresponding share of exports to developing countries declined from 61.1 to 43.0 per cent. Exports to Latin America were less dynamic—the cumulative annual growth rate was 11.9 per cent—whereas exports to Asian countries increased by 13.0 per cent. Exports to the socialist countries increased very rapidly (by 22.7 per cent annually), although trade with those countries still represents only a small proportion of total Japanese exports (5.2 per cent in 1967) (see table 2).

Table 2

JAPAN: GEOGRAPHICAL DISTRIBUTION OF EXPORTS

	Exports f.o.b. (million of dollars)		*Cumulative annual average*	*Distribution (percentages)*	
	average 1956-58	*average 1966-68*	*1966-68 / 1956-58*	*average 1956-58*	*average 1966-68*
Total	2 737	11 063	15.0	100.0	100.0
To developed countries	1 073	5 730	18.2	39.2	51.8
North America	683	3 688	18.4	25.0	33.3
Western Europe	295	1 470	17.4	10.8	13.3
EEC	122	613	17.5	4.5	5.5
European Free Trade Association	143	673	16.8	5.2	6.1
Australia, New Zealand and South Africa	93	573	19.9	3.4	5.2
To developing countries	1 673	4 757	11.0	61.1	43.0
Asia	897	3 057	13.0	32.8	27.6
Latin America	170	522	11.9	6.2	4.7
To socialist countries	74	570	22.7	2.7	5.2

SOURCE: United Nations, *Monthly Bulletin of Statistics,* March 1961 and 1970.

B. THE MAIN FACTORS IN THE GROWTH OF EXPORTS

1. *General comments*

As a general rule, the growth of exports can be attributed to two main factors:[2] the composition of exports changing in line with movements in world demand; and products becoming more competitive in world markets.

It would appear that over the past fifteen years Japan's exports have increased, as a result of both these factors, more than those of any other country.

Although it is not easy to assess exactly how much influence each factor exerts, a tentative analysis may give a rough idea of the scale of their influence in Japan, as compared with the major industrialized countries, during the period 1962-1967.

First, it must be noted that if Japanese exports of manufactures had grown at the same pace as total world exports of manufactures, the value of the export increment during the period would have been 2,870 million dollars (theoretical increment No. 1), which is approximately half the increment actually achieved, namely 5,400 dollars. If different rates of growth are taken for different products,[3] rather than a single rate for manufactures as a whole, the value of the increment is even lower: 2,070 million dollars (theoretical increment No. 2). The difference between the two theoretical increments is due to the fact that any one country's most important exports may not necessarily be the products for which the world demand is greatest. Only in Japan and the United States is the value of theoretical increment No. 1 higher than that of No. 2, although the difference is greater in the case of Japan. This would indicate that at the beginning of the period under study the composition of Japanese exports was not so favourable as that of other countries in terms of the movement of world demand for manufactures during the period.

Secondly, it must be noted that, in order to appreciate the net effect of the changes in the composition of exports during the period, all that is needed is to work out the relationship between each country's most important exports and the products for which world demand increased most rapidly. For this purpose, the rate of growth of world demand for each group of manufactures was applied to the average composition of exports during the period.

The net effect of changes in the composition of exports was then obtained by calculating the difference between the above figure and theoretical increment No. 2. In absolute terms, the figure for Japan is the highest after the United States; while its ratio to the total value of exports is considerably higher than for the United States.

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[2] Other factors, which are not discussed explicitly here, also play a part, for example, the capacity to finance exports, channelling of exports towards countries with the most rapidly growing economies, etc.

[3] The basis for these calculations was thirty-eight SITC groups of manufactures (sections 5 to 8).

The difference between the actual increment of exports and theoretical increment No. 2, after subtracting the net effect of changes in composition, is equal to the net effect of the increase in the capacity to compete plus the combined effects of this increase and of changes in composition. In absolute terms, the amount of this difference is greater for Japan than for other countries (see column (9) of table 3). The figures for the United States, France and the United Kingdom are less than zero, which means that these countries have not been able to increase their capacity to compete.

In other words, Japan changed the composition of its exports and increased its capacity to compete more than other countries, despite the fact that at the beginning of the period the structure of its exports was less favourable in terms of the trends of world demand than that of the other countries.

2. *Increase in the capacity to compete*

Although the capacity to compete (or competitiveness) is not a very clearly defined concept, it is certain that any increase in the capacity to compete is the result of improved quality and lower prices for export goods. Over the seven years, 1960-1067, the price of Japan's export goods fell by 5 per cent, at a cumulative annual rate of —0.7 per cent, which is lower than in other countries.[4] Other countries, with the exception of Italy, increased their export prices over the period, especially France, whose export prices increased by as much as 2 per cent per year, i.e., an increase of 15 per cent over seven years. There is a clear-cut trend for exports to increase faster in countries in which export prices declined or increased comparatively more slowly, as in Japan, Italy and the Federal Republic of Germany.

This decline in export prices is due in the main to the rapid and steady increase in the productivity of Japan's manufacturing sector, owing to Japan's extraordinarily fast rate of economic expansion, which was promoted by what may be termed a "virtuous circle".

This fact comes out very clearly in table 4. Over the seven years, 1960-1967, real wages, industrial production and the number of persons employed in manufacturing rose in Japan —and export prices declined—more rapidly than in other countries. This was not the result of holding wages down, but of increases in productivity that were appreciably higher than in other countries, even though wages also increased at a comparatively faster rate. Furthermore, the increases in productivity were not due to a drop in employment, as was the case in certain countries;[5] on the contrary, they were achieved at a time when the number of persons employed was growing more rapidly than in any other country.

There was a similar trend during the preceding seven-year period, although the increase in the number of persons employed was comparatively much larger. Thus, over a period of fourteen years, Japan has recorded the highest rate of increase in industrial production, number of persons employed in manufacturing and labour productivity of any country in the world.

It should be noted that this fact is an indication of the dynamism of Japan's economic growth. Increases in wages—larger than in other countries—helped to swell personal savings, which led to increases in industrial investment and a rise in consumption levels, this latter in turn stimulating domestic demand for certain goods. The increase in investment in highly advanced industrial equipment, added to the expanding scale of production, raised productivity in the manufacturing sector and reduced export prices, while at the same time making it possible to increase wages and the number of persons employed at a more rapid rate, this in turn helping to increase investment and, subsequently, productivity. This is the kind of dynamic process which has taken place in Japan over the past fifteen years, and which is still gathering momentum. It can be described as a "virtuous circle" that led to a steady fall in export prices for Japanese manufactures and a rapid rise in exports.

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[4] The index of export prices shows the trends of unit values which react to the effect of changes in the composition of exports. In Japan, the changes meant more emphasis on goods produced by the heavy and chemicals industries, whose prices may on average have been higher in absolute terms at the beginning of the period than in other countries. In this context, a continuous decline in the index of export prices, while not implying that the absolute maximum capacity to compete has been achieved, does mean that the capacity to compete has improved.

[5] In certain countries, for example France and the Federal Republic of Germany, the actual number of persons employed fell in 1967, according to the employment index of the manufacturing sector published by the International Monetary Fund. This helped to raise the rate of growth of productivity.

Table 3

DEVELOPED COUNTRIES: TENTATIVE ASSESSMENT OF THE DETERMINANTS OF THE INCREASE IN EXPORTS OF MANUFACTURES,[a] 1962-1967

	(1)	(2)	(3)	(4)	(5)	(6)[b]	(7)	(8)[c]	(9)	(10)
	Actual exports f.o.b. (millions of dollars)		*Actual exports increment 1962-1967* $(3) = (2) - (1)$	*Percentage increment* $(4) = \frac{(3)}{(2)}$	*Theoretical increment N° 1* $(5) = (1)X_\gamma$	*Theoretical increment N° 2* $(6) = \Sigma\gamma_i X_{ij}$	*Difference between theoretical increments Nos. 1 and 2* $(7) = (6) - (5)$	*Net increment resulting from changes in composition of exports*	*Gross increment resulting from increased capacity to compete* $(9) = (3) - (6) - (8)$	*Net increment resulting from changes in composition of exports, as a percentage of the value of exports*
	1962	*1967*								
All OECD countries	62 942.0	104 291.0	41 349.0	$\gamma = 65.7$						
United States	13 841.0	20 768.7	6 927.7		9 093.5	9 427.9	334.4	185.2	—2 685.4	1.338
France	5 400.3	8 449.7	3 049.4		3 548.0	3 471.6	—76.4	47.7	—469.9	0.883
Italy	3 514.4	6 980.9	3 466.5		2 309.0	2 339.9	30.9	37.4	1 089.2	1.064
Japan	4 368.9	9 758.2	5 389.3		2 870.4	2 705.0	—165.4	104.5	2 579.8	2.392
Federal Republic of Germany	11 738.2	19 479.6	7 741.4		7 712.0	7 959.7	247.7	31.7	—250.0	0.270
United Kingdom	8 832.4	11 238.1	2 405.7		5 802.9	5 848.4	45.5	60.8	—3 503.5	0.688

SOURCE: ECLA, on the basis of statistics in Organization for Economic Co-operation and Development, *Commodity Trade Series B*, and United Nations, *Commodity Trade Statistics*.

[a] SITC sections 5 to 8.

[b] γ_i = percentage increment of exports of product *i* from OECD countries as a whole.

X_{ij} = actual value of exports of product *i* from country *j* in 1962.

[c] $$(8) = \tfrac{1}{2}\,\Sigma\,\gamma_i X_{ij}\left(\frac{1+\gamma_{ij}}{1+\gamma_j} - 1\right) = \tfrac{1}{2}\,\Sigma\,\gamma_i X_{ij}\left(\frac{1+\gamma_{ij}}{1+\gamma_j} + 1\right) - (6).$$

γ_j = percentage increment of exports of all manufactures from country *j*.

γ_{ij} = percentage increment of exports of product *i* from country *j*.

Table 4

MAJOR DEVELOPED COUNTRIES: INCREASE (OR DECREASE) IN PRODUCTIVITY, IN NUMBER OF PERSONS EMPLOYED IN MANUFACTURING, AND IN EXPORT PRICES

(*Average increase in cumulative annual rate of growth*)

	United States	*France*	*Italy*	*Japan*	*United Kingdom*	*Federal Republic of Germany*
			1953-60			
Wages and salaries	3.9	8.3	3.8	4.7	4.7	7.1
Industrial production	2.6	7.1	9.0	14.0	3.3	8.8
Number of persons employed in manufacturing	1.1[a]	0.9	2.0	8.7	0.9	5.3
Labour productivity	1.4	6.1	6.9	4.9	2.4	3.3
Export prices	1.0	4.1	—2.0	—0.8[b] —1.1[c]	1.3	0.6[d] 1.0[e]
			1960-67			
Wages and salaries	3.3	5.9	7.5	9.9	4.2	8.0
Industrial production	5.5	4.9	6.5	12.6	2.5	4.0
Number of persons employed in manufacturing	2.8[a]	0.4	1.5	4.6	0.6	0.3
Labour productivity	2.6	4.4	5.0	7.6	1.9	3.6
Export prices	1.5	2.0	—0.5	—0.7[b] —0.6[c]	1.9	0.3[d] 1.0[e]
			1955-68			
Wages and salaries	3.8	7.8	7.0	9.1	4.3	8.1
Industrial production	4.2	6.2	8.2	15.0	2.8	5.8
Labour productivity	2.9	6.0	5.4	11.3	2.6	4.2
Unit cost of labour	0.7	1.7	1.2	—2.0	1.6	3.8
Unit value of exports	2.1	0.7	—1.3	—0.2	1.5	1.2
Volume of exports	4.6	8.2	18.1	16.3	3.5	10.7

SOURCE: 1953-1967: calculated directly from data in International Monetary Fund, *International Financial Statistics, Supplement to 1967-68*, and February 1969; 1955-68: GATT, *International Trade 1968*. Figures for unit value and volume of exports refer to manufactures.

[a] Number of persons in the non-agricultural sector.

[b] Unit value supplied by Ministry of Finance.

[c] Unit value supplied by Bank of Japan (Central Bank).

[d] Unit value.

[e] Wholesale price index of export goods.

It would therefore seem worth while to take a careful look at this process, in order to discover the main reason why Japanese goods became more competitive in world markets; this is the subject of chapter II.

3. *Changes in the composition of exports*

Japan changed the composition of its exports to suit the structure of world demand to a much greater extent than other countries, as noted above. The official *Economic Survey of Japan 1965-1966* shows that the composition of exports changed in the following way during the period 1955-1964: the goods for which world demand is growing most rapidly raised their share in Japan's total exports from 10 to 26 per cent, while the goods for which world demand is growing comparatively rapidly raised their share from 9 to 15 per cent. In contrast, growing at a normal pace fell from 17 to 15 per the share of goods for which world demand is cent; the share of goods for which demand is growing slowly fell from 45 to 37 per cent; and the share of goods for which world demand is growing most slowly fell from 21 to 8 per cent. These changes in the composition of exports were very far-reaching, compared with those occurring in other industrialized countries (see table 5).[6]

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[6] Table 5 shows that the composition of Japan's exports at the beginning of the period under review was less favourable than that of the other industrialized countries, since the bulk of exports was made up of goods for which world demand was growing slowly. This shortcoming, however, was rectified as Japan rapidly changed the composition of exports to suit world demand. A similar conclusion emerged from the tentative analysis of the period 1962-1967.

Table 5

INCREASE IN AND COMPOSITION OF EXPORTS OF MANUFACTURES

	Percentage increase of exports of the industrialized countries (1955 64)	*Composition of exports of manufactures (percentage of total value of exports of manufactures)*											
		Industrialized countries (1955 64)		*Japan (1955 64)*		*Federal Republic of Germany (1955 64)*		*United Kingdom (1955 64)*		*Italy (1955-64)*		*United States (1955-64)*	
Goods for which world demand is growing most rapidly (increase in exports over 170 per cent)	210	16	23	10	26	21	24	17	21	18	31	17	25
Goods for which world demand is growing comparatively rapidly (120-170 per cent)	147	29	34	9	15	33	41	32	39	26	30	42	42
Goods for which world demand is growing normally (87-120 per cent)	94	14	13	17	15	16	13	15	14	22	15	13	12
Goods for which world demand is growing slowly (50-87 per cent)	76	30	24	43	37	22	18	25	20	26	20	22	16
Goods for which world demand is growing most slowly (less than 50 per cent)	21	10	6	21	8	7	4	12	6	8	4	7	5
TOTAL		*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*

SOURCE: Economic Planning Agency, Japan, *Economic Survey of Japan, 1965-1966*, page 84.

Generally speaking, the manufactures for which world demand was highest were those produced by the heavy and chemicals industries, while those for which world demand declined came, with some exceptions, from light industry. It can be seen that the composition of Japan's exports has kept precisely in step with the trends of world demand. As noted earlier, the share of textiles and food-stuffs in Japanese exports fell from 46 to 20 per cent, while that of machinery rose from 15 to 42 per cent over the period 1953-1967.

This change in the structure of exports, which placed the emphasis on goods produced by heavy industry and the chemicals industry, is also closely associated with the process of rapid economic growth, since investment in these industries was comparatively greater and the structure of manufacturing changed radically, as noted below.

Methodological note

Let

X_{ij} be the value of exports of product *i* from country *j* in base year

r_{ij} be the rate of increase of exports of product *i* from country *j* during the given period

X_j be the total value of exports of country *j* in base year

r_j be the rate of increase of total value of exports of country *j*

r_i be the rate of increase of world exports of product *i*

r be the rate of increase of world exports,

in which case the export increment of country *j* during a given period may be expressed as follows:

$$\begin{aligned} \sum r_{ij} X_{ij} &= \sum r_{ij}' X'_{ij} \\ &= \sum (r_i \div r'_{ij} - r_i)\ (X_{ij} \div X'_{ij} - X_{ij}) \end{aligned}$$

where

$$X_{ij}' = \frac{\dfrac{1 \div r_{ij}}{1 \div r_j} \div 1}{2} X_{ij}\ ; \qquad r'_{ij} = \frac{2}{\dfrac{1 \div r_{ij}}{1 \div r_j} \div 1} r_{ij}$$

i.e.,

$$\sum r_{ij} X_{ij} = rX_j$$

(theoretical increment No. 1)

$$\div \sum r_i X_{ij} - r X_j$$

(effect of the original composition of exports)

$$\div \sum r_i (X_{ij}' - X_{ij})$$

(effect of the changes in structure of exports over the period)

$$\div \sum (r'_{ij} - r_i) X_{ij}$$

(effect of increase in capacity to compete, assuming no change in original composition of exports)

$$\div \sum (r'_{ij} - r_i)\ (X'_{ij} - X_{ij})$$ (combined effect of increase in capacity to compete and changes in composition)

$\sum r_i X_{ij}$ is theoretical increment No. 2. The third term on the right side of the above equation can also be expressed as:

$$\sum \frac{r_i X_{ij}}{2} \left(\frac{1 \div r_{ij}}{1 \div r_i} - 1 \right)$$

CHAPTER II

JAPAN'S RAPID ECONOMIC GROWTH AND SOARING EXPORTS

A. A BRIEF SUMMARY OF JAPAN'S ECONOMIC GROWTH

Chapter I dealt with the evolution of Japan's capacity to compete and the structural change in its exports, which are closely related to that country's rapid economic growth.

Several factors have combined to accelerate growth, and this process has been called a "virtuous circle".[7] It is not easy to determine which was the key factor, however, since they are all interrelated; but one cumulative factor stands out, i.e., intensive investment in the dynamic industries. Econometric studies would, of course, have to be undertaken in order to quantify the precise role played by this factor, but it may be considered a key factor in any economic development process and it is directly related to Japan's exceptional economic growth.

In fact, gross investment (fixed capital formation and amortization) has accounted for an average of approximately 35 per cent—and sometimes as much as 40 per cent—of the gross national product over the past twelve years, compared with an average of 20 to 25 per cent in other countries and 17 per cent in the United States and the United Kingdom. There is a striking correlation between investment and the rate of economic growth in the different countries. While the cumulative annual growth rate of Japan's gross national product was 10 per cent, in the other industrialized countries it ranged between those recorded in Japan and the United Kingdom, in almost perfect correlation with average investment in the countries concerned. Therefore, Japan's high rate of investment is a key factor of its outstanding economic growth (see table 6).

How was the necessary capital obtained to make this investment possible? As stated below, foreign capital has not played a basic role in Japan and the main source of investment has always been saving at the different levels of its economy: by enterprises, by private persons and by the Government. At all these levels saving was very high in comparison with that of other industrialized countries. Saving of private persons and enterprises accounted for the largest share of gross national saving, i.e., 30 and 50 per cent respectively, although the latter is not really so high since a large part of it comes under the head of amortization. In any case, the high investment rate of enterprises was financed by: (*a*) their own net saving; (*b*) saving under the head of amortization; (*c*) personal saving by means of commercial bank loans; and (*d*) public financing.

Consideration will be given first to the factors responsible for the huge volume of personal saving. In Japan saving constituted over 20 per cent of disposable personal income, as against 10 per cent or even less in other countries. Since saving is the difference between income and consumption, any increase in saving is due either to the rapid growth of disposable income or the slow growth of consumption.

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[7] This term was used by Mr. Saburo Okita, former Director of Japan's Economic Planning Agency, in his study entitled *Cause and Problems of Rapid Economic Growth in Postwar Japan* (Tokyo, Japan Economic Research Centre, March 1967), but not in exactly the same sense as it is used in the present study.

Table 6

DEVELOPED COUNTRIES: INVESTMENT AND ECONOMIC GROWTH RATE

	Gross national product (thousands of million of dollars at current prices)			*Percentage cumulative annual growth rate of the gross national product*		*Fixed capital formation as a percentage of the gross national product, 1956-1963*	*Composition of national saving (percentages of the gross national product, 1956-1963)*			
	1957	*1966*	*1968*[a]	*Nominal increase, 1957-1966*	*Real increase, 1957-1966*		*Amortization of fixed capital*	*Net saving of enterprises*	*Net personal saving*	*Net government saving*
United States	447.9	756.5	836.4	6.0	4.3	17	10	2	5	2
Japan	31.4	102.7	132.9	14.5	10.2	34	11	5	11	7
Federal Republic of Germany	51.5	119.6	125.7	10.4	6.2	25	9	2	9	7
United Kingdom	62.3	105.1	120.0	6.1	3.4	17	8	5	3	2
France	42.5	101.9	112.2	8.6	5.3	21	9	3	5	3
Italy	27.3	61.5	72.0	10.0	5.8	23	9	11		3

SOURCE: Data on the gross national product and its growth rate: Japan's Economic Planning Agency, *Economic Survey of Japan, 1967-1968,* p. 60; data on investment and saving: *Economic Survey of Japan, 1965-1966*, p. 55.

[a] Estimates.

Both factors were present in Japan. As regards the slow increase in consumption, it must be made clear that, apart from non-economic reasons such as the traditional habit of saving influenced by Confucianism, the Japanese were accustomed to a very low and even frugal level of living, which declined even further during the Second World War and the post-war period. It was not until seven or eight years after the cessation of hostilities—about 1953—that Japan regained its pre-war level of living. Moreover, over the last fourteen years of the period (1953-67) under consideration, there was a more rapid increase in wages and salaries in Japan than in other industrialized countries, except the Federal Republic of Germany. Other factors, such as the special system for the payment of wages and salaries and the inadequate social security system,[8] have also contributed to the high percentage of personal saving, converted through the commercial banks into industrial investment.

Saving by enterprises may be ascribed to the difference between the growth rates of productivity and of wages, and to the resulting increase in the company's profits, which are ploughed back on an increasingly large scale. Suffice it to say that, while in 1967 the wage index, in real terms, was 173 per cent in relation to the base year 1955 (that is, a cumulative annual growth of 4.7 per cent) in enterprises employing more than thirty workers, the productivity index was 229 per cent (an annual growth of 7.2 per cent).[9] Clearly, this difference enabled enterprises, particularly the larger ones, not only to reduce the prices of products they manufactured—particularly for export—but also to obtain considerably higher profits, which made it possible for them to achieve high rates of amortization and net saving. This in turn, together with personal saving, constituted one of the principal sources of the rapidly increasing investment to which the productivity increase was largely due. Thus the circle is completed, since the high investment rate makes for an increase in productivity, which boosts saving of both enterprises and private persons owing to the slower rise in wages and the still more sluggish growth of consumption. These two types of saving constitute a source of additional investment which again raises productivity.

The difference between the growth rate of productivity and that of wages was unquestionably due primarily to the plentiful supply of labour and the special employment system in force in Japan and, secondly, to the great technological progress made.

At the end of the Second World War, Japan's population increased rapidly as a result of: (*a*) the repatriation of soldiers and of emigrants from former colonies and territories occupied by the Japanese armed forces; and (*b*), the high birth-rate recorded in the first five years after the war, a period known as the "baby boom".[10] Consequently, in the early post-war years the heavy pressure of labour kept wages down. Most important, however, is the fact that later on, when the great economic boom arrived, there was a young and efficient labour force of substantial size which was paid fairly low wages in relation to the level of productivity, because of Japan's special system of employment (*shushinkoyosei*) under which life contracts are extended, with wage scales based on age or seniority rather than efficiency.

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[8] The Japanese Government and enterprises, almost without exception, use a system of bonuses equal to at least three months' salary or wages, which are paid in June and December. These bonuses vary according to the companies' yearly profits. A proportion of the wage and salary increases is made up of these bonuses, which are usually saved, since wage-earners are accustomed to living on their monthly earnings; these savings constitute 60 per cent of total personal saving. In essence, however, the high level of saving is not necessarily attributable to this system.

[9] The productivity index was calculated by dividing the manufacturing output index (provided by the Ministry of International Trade and Industry) by the index for the number of workers of manufacturing enterprises employing more than thirty persons (provided by the Ministry of Labour). Another productivity index can be calculated on the basis of surveys conducted by the Ministry of Labour, by using the number of man-hours required to obtain the same output in the principal manufacturing industries. The index thus calculated was 248 per cent in 1966 in relation to 1955. The wage index also refers to workers in enterprises with more than thirty workers. The above productivity and wage indexes differ from those in tables 4 and 10, which relate to manufacturing as a whole. In Japan, as stated below, there are quite a number of enterprises with fewer than twenty-nine workers, the proportion in 1966 being 33.6 per cent. In these small enterprises there was not much difference between the increase in wages and the increase in productivity. For further details, see chapter IV. The foregoing analysis relates mainly to enterprises with over thirty workers. Nevertheless, table 4 also shows a larger increase in productivity than in wages in the period 1955-1968. (*Source*: Bureau of Statistics, Office of the Prime Minister, *Monthly Statistics of Japan*; and Bank of Japan, *Economic Statistics of Japan*, several issues.)

[10] Today Japan is one of the countries with the slowest population growth in the world, the average annual rate being barely 1.1 per cent from 1955 to 1967, in contrast to the high rates recorded in the early post-war years. From 3.4 per cent in 1947 it dropped steeply to 2.8 per cent in 1948, 1.9 per cent in 1950 and 1.7 per cent in 1952. This decline was due partly to Japan's family planning campaign, but this was soon replaced by independent economic reasons arising from its economic and social progress.

Another factor was also highly favourable to the industrial sector. During the economic boom much of Japan's agricultural manpower shifted to industry. In 1955, 16 million economically active persons were engaged in agriculture; this is slightly higher than the pre-war figure, and it represented 41 per cent of the total economically active population, while the secondary sector absorbed 23 per cent, of which 19 per cent was employed in manufacturing. The structure changed radically in the next twelve years. By 1967 the secondary sector was employing 34 per cent, manufacturing 26 per cent, and agriculture only 20 per cent. This change involved a large-scale shift of workers from agriculture to other sectors—particularly industry, which was able to keep wages at a relatively low level in relation to the increase in productivity.

Moreover, the growth of Japan's labour productivity far outstripped that of average investment in industry per worker, thanks to the great technological progress achieved through the introduction of foreign techniques. In a country which has a lower level of technology than others, it is obviously cheaper to introduce foreign methods for increasing productivity than to devise new ones.

There was a wide technological gap between Japan and the United States and Europe at the end of the Second World War, in spite of Japan's highly skilled manpower resources. As stated later in this study, Japan's ability to absorb up-to-date techniques, adapt them to local conditions and improve them enabled it to boost its productivity very rapidly (see table 7).

The combined effect of all these factors was a slower increase in wages and salaries[11] than in productivity, and a considerable amount of savings in the hands of enterprises which could be converted into additional investment. Nevertheless, the annual rate at which the level of wages rose in manufacturing was faster in Japan than in any other industrialized country except the Federal Republic of Germany (see table 4). In other words, the increase in productivity in Japan was such that it was possible to raise wages considerably while still leaving enterprises a sufficient margin for an appreciable increase in their profits and gross saving. The most important fact is that the effect of the increase in productivity on both wages and profits was to increase investment, which stepped up industrial productivity, thus constituting a cumulative process of investment and productivity. The high rate of investment and still faster growth of productivity are, in this sense, the key factors of Japan's accelerated economic development.

For a long time, productivity increased more rapidly in Japan than in any other industrialized country, reaching a general level of 11.3 per cent in manufacturing between 1955 and 1968,

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[11] In Japan, trade unions are organized at the enterprise level. This is a different system from that followed in other industrialized countries, where trade unions are organized according to the profession or type of work. This fact, coupled with its relatively plentiful manpower, may well have reduced the bargaining power of Japanese trade unions in comparison with those existing in other countries, although after the war three important laws were passed improving the workers' conditions.

Table 7

INDUSTRIALIZED COUNTRIES: CONTRIBUTION OF TECHNOLOGICAL PROGRESS TO THE INCREASE IN PRODUCTIVITY

(*Cumulative annual rates*)

	Japan (1955-66)	*United States (1955-64)*	*United Kingdom (1955-64)*	*Federal Republic of Germany (1955-64)*
Increase in labour productivity	*9.4*	*3.5*	*2.9*	*5.6*
(*a*) Contribution of increase in capital per worker	5.2	1.6	1.3	3.5
(*b*) Contribution of technlogical progress	4.1	2.0	1.6	2.2

SOURCE: Economic Planning Agency, *Economic Survey of Japan, 1966-1967.* Calculated on the basis of the Cobb-Douglas production function.

compared with 2.9 per cent in the United States, 2.6 per cent in the United Kingdom, 4.2 per cent in the Federal Republic of Germany and 5.4 per cent in Italy (see table 4).

It must be underlined that some of the factors mentioned above, such as Japan's plentiful labour supply, the rapid shift of manpower from other sectors to manufacturing and the high rate of personal saving, were not decisive but complementary factors. The crux of the matter is that there was heavy investment in those productive activities, particularly heavy industries and chemicals, which offered the best chance of raising productivity, and this resulted in a cumulative process of investment and increasing productivity.

Although the abundance of manpower did actually help prevent wages from rising as fast as productivity, it would not by itself have been a positive factor. Many countries have plenty of manpower or overt or disguised unemployment, but this is not a positive factor, for want of investment to step up productivity.

Furthermore, although the shift of manpower from agriculture to industry helped to make labour plentiful, this shift was possible only because manufacturing was able to absorb the influx of labour; otherwise, this shift either would not have taken place at all or would have been towards other sectors, such as services or public administration, as happens in some countries.[12] It must be recalled that for the past fourteen years (1953-1967) the cumulative annual rate of increase in the number of industrial workers in Japan has always been higher (6.6 per cent) than in other industrialized countries (see table 4).

Moreover, personal saving would not have increased in absolute terms if income had not risen, and this, in turn, would not have been possible without the growth of productivity.

The above process also brought about a radical change in the structure of manufacturing production, shifting emphasis to heavy industry and chemicals.

The high rate of investment which has ranged from 30 to 40 per cent of the gross national product over the last fifteen years, already indicates the existence of a huge domestic demand for capital goods and intermediate industrial products, i.e., the products of heavy industry and the chemicals industry. Demand for durable consumer goods also soared as a result of the upswing in the level of personal income in the mid-1950s. External demand for these goods, and particularly for certain items, was also considerable.

In response to heavier demand, these industries took full advantage of the cumulative process of investment and productivity growth. Although productivity continued to increase faster than wages in the manufacturing sector as a whole over a considerable period, particularly in the 1950s, the cumulative process was particularly intense in the heavy and chemical industries, whose productivity increased enormously thanks to the use of new techniques, their larger scale of production and the internal and external economies they were able to achieve. This enabled them to make even larger investments, since the increase in wages was the same as in manufacturing in general. In other words, the "virtuous circle" operated more intensively in these industries.

This accounts for the marked differences in the productivity growth rates in the various sectors. Figure I shows that manpower productivity in the textile industry increased by less than 230 per cent from 1955 to 1965, compared with 300 per cent in the heavy and chemical industries, in which investment also rose much more rapidly. The share of the machine-producing industry in total investment in manufacturing increased from 14.5 to 25.3 per cent, and that of the chemical industry from 16.5 to 18.6 per cent between 1954 and 1964, while that of the textile industry declined from 12 per cent to 6.8 per cent. The structure of industrial production changed radically as a result of these disparities (see table 8).

To sum up, the Japanese economic development process was such that it permitted intensive investment on a cumulative basis and brought about a radical change in the structure of manufacturing production, shifting the emphasis to heavy industry and the chemical industry. Both government policy and the efforts of the private sector directed and intensified this general process, and encouraged investment in heavy industry and the chemical sector

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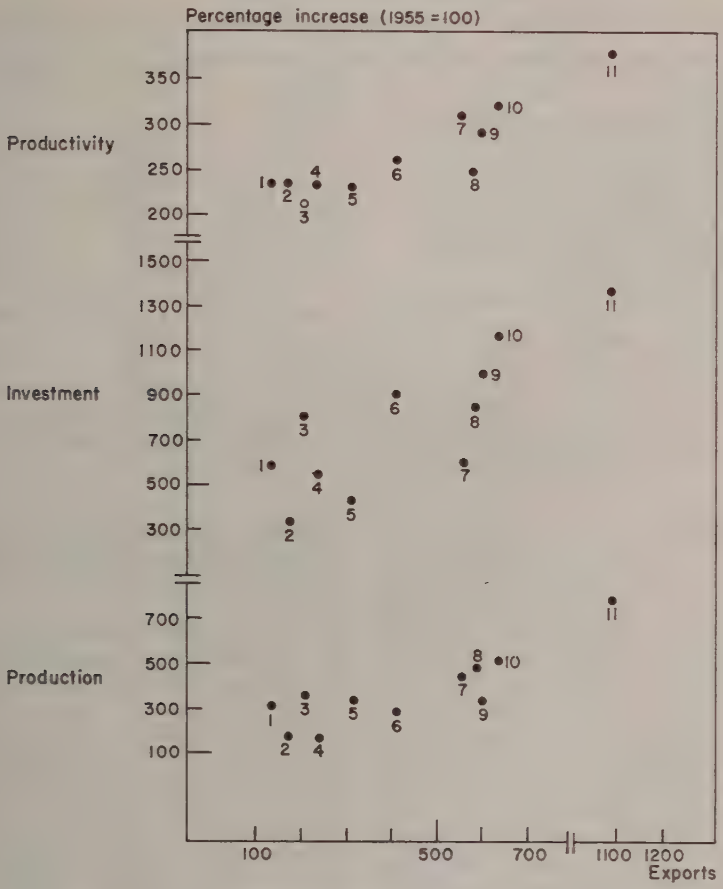
[12] It should be noted too, that in spite of the absolute reduction from 16 million to 10 million in the economically active rural population, Japan's agricultural production grew faster than its total population—by 55 per cent compared with 17 per cent—between the periods 1950-52 and 1965-67 (agricultural output regained its pre-war level in the years 1950-52, that is, before manufacturing production). Although the evolution of agriculture was not so striking as that of manufacturing, had it not been for the increase in agricultural output, food imports might have caused balance-of-payments difficulties.

Figure I

JAPAN: INCREASE IN PRODUCTIVITY, INVESTMENT, PRODUCTION AND EXPORTS, BY INDUSTRY, 1955-1965



EXPLANATORY NOTE

1 Pulp and paper
2 Textiles
3 Non-ferrous metals
4 Food-stuffs
5 Glass, ceramic products and porcelain
6 Made-up textile goods
7 Chemical products
8 Iron and steel
9 Metal manufactures
10 Industrial machinery
11 Transport equipment

Source: Ministry of International Trade and Industry, *Official report on foreign trade, 1967,* Tokyo (printed in Japanese).

in particular. In other words, full operation of the "virtuous circle" is not a simple natural process; it was due to the efforts of the public and private sectors, as will be seen from the following chapter.

B. Economic development and the growth of exports

The cumulative growth of investment and productivity made for an extraordinary in-

Table 8

JAPAN: CHANGES IN THE STRUCTURE OF MANUFACTURING PRODUCTION

(*Percentage share of value added*)

	1955	*1960*	*1965*
Total	*100.0*	*100.0*	*100.0*
Food-stuffs	10.67	8.11	9.30
Textiles (including made-up textile goods)	14.74	10.21	7.67
Furniture and wood products	3.90	3.52	3.97
Paper and printing	10.08	7.69	8.23
Leather and rubber	2.35	2.11	1.99
Chemicals and petroleum products	16.01	12.79	14.19
Glass, ceramic products and porcelain	5.50	4.68	4.67
Simply-worked metals	11.99	11.97	9.62
Metal manufactures and machinery in general	9.98	14.92	15.14
Electrical machinery	5.47	10.63	9.63
Transport equipment	5.93	9.45	9.53
Other manufactures	3.38	3.92	6.06

SOURCE: Ministry of International Trade and Industry, *Official report on foreign trade, 1967*, Tokyo (printed in Japanese).

crease in exports. The two factors mainly responsible for the growth of exports have already been dealt with in chapter I: the increase in the capacity to compete and the shift in the structure of exports towards products for which there was a rapidly growing world demand. It is precisely these two factors which are the natural result of the above process.

First, there is no doubt that the factor which was decisive in increasing competitiveness was the growth of productivity achieved through the "virtuous circle", although the steps taken to improve the products and ensure quality control, which are referred to later in this study, also helped. The low wage levels in absolute terms were not important in this context, although they did initially have some influence, particularly at the end of the Second World War, for the cost of labour is not enough, by itself, to explain the steady reduction in export prices.

Secondly, it is understandable that the bias in the structure of production should have been increasingly towards products of the heavy industries, the chemical industry and those using a high level of technology, on account of the high rate of investment in those industries beginning in the mid-1950s which enabled them to step up their productivity. Needless to say, the more rapid growth of productivity in the heavy and chemical industries also helped to reduce the export prices of their products and to increase their capacity to compete much more than was the case for other manufactures.

Moreover, the important point is that these are precisely the products for which world demand has been heaviest over the past fifteen years. The *Economic Survey of Japan, 1965-1966,* summarized in table 9, shows that the products for which world demand is growing most rapidly are manufactured by industries in which investment is highest (31 per cent annually over the period 1955-1964). Investment in industries manufacturing products for which world demand is growing comparatively rapidly (but not at the maximum rate) rose 26 per cent annually, followed by investment in industries for whose products world demand is growing normally (25 per cent), slowly (18 per cent) and most slowly (15 per cent). Therefore, these investments, which varied in intensity according to the trend of world demand, resulted in the differences in the rates of growth of productivity, and consequently in the capacity to compete (see figure I). In short, investment stood at the highest level in those industries for whose products world demand was increasing most rapidly, which therefore achieved the highest level of productivity and were most competitive, with the result that they achieved the largest increase in exports (see table 10).

Table 9

JAPAN: INDUSTRIAL INVESTMENT AND INCREASE IN PRODUCTIVITY AND EXPORTS

(*Cumulative annual growth rates*)

Classification of industries by rate of growth of world demand in 1955-64[a]	*Exports*			*Investment in industrial equipment*			*Productivity*
	1955-60	*1960-64*	*1955-64*	*1955-60*	*1960-64*	*1955-64*	*1955-64*
Industries manufacturing:							
Products for which world demand is growing most slowly	5	—8	1	17	12	15	8.0
Products for which world demand is growing slowly	12	5	9	27	8	18	8.6
Products for which world demand is growing normally	15	17	16	41	8	25	9.8
Products for which world demand is growing comparatively rapidly	27	19	23	36	15	26	10.8
Products for which world demand is growing most rapidly	51	26	39	41	20	31	10.4

SOURCE: Economic Planning Agency, *Economic Survey of Japan, 1965-1966*, pp. 84-86, with slight adaptations.

[a] The definition of industries is the same as that used in table 5.

Table 10

JAPAN: PRODUCTION, PRODUCTIVITY AND COST, AND EXPORTS, BY INDUSTRY, 1955-1968

(Cumulative annual growth rates)

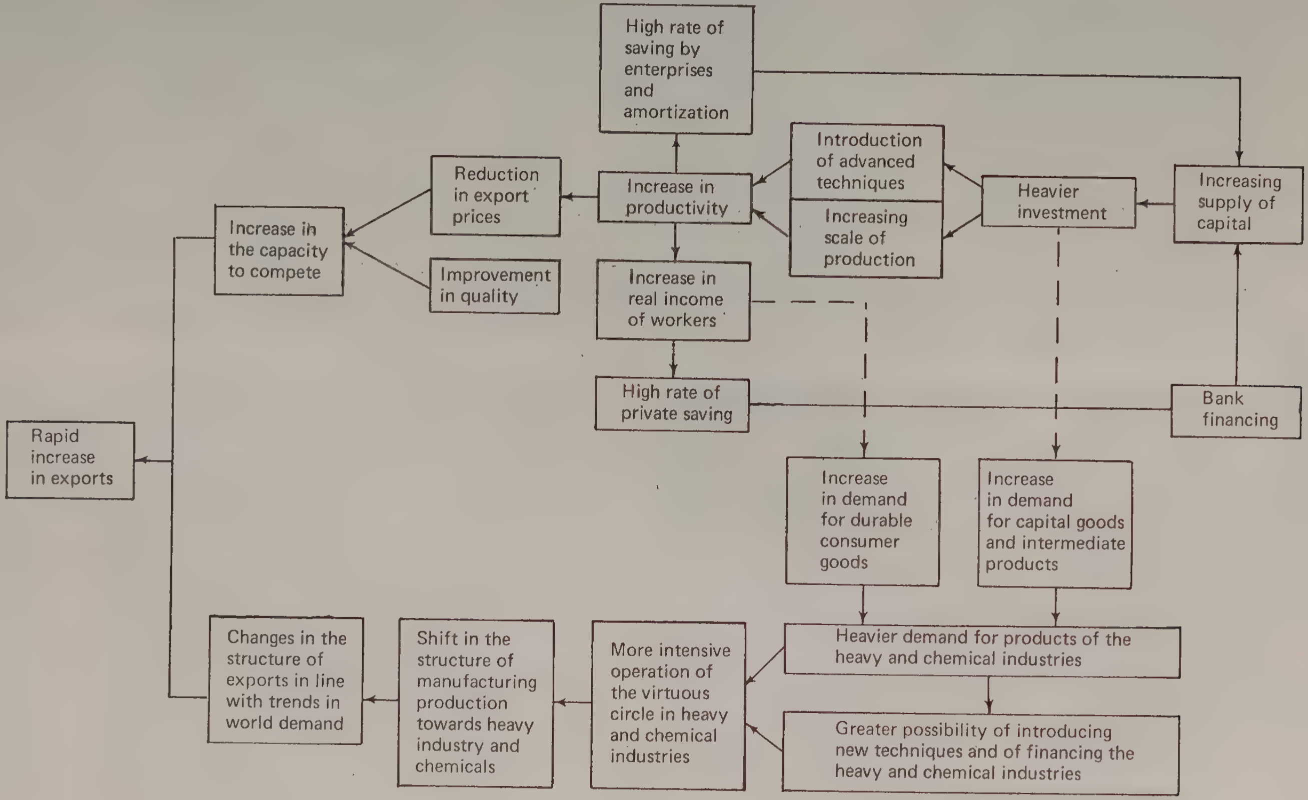
	Manufacturing as a whole	*Textiles*	*Chemicals*	*Iron and steel*	*Machinery, excluding electrical machinery*	*Electrical machinery*	*Transport equipment*
Production							
1955-61	17.5	9.7	14.9	19.4	24.6	40.9	25.4
1961-65	9.9	7.6	12.0	9.5	7.4	8.9	18.6
1965-68	17.1	8.3	15.3	19.0	24.8	30.0	21.0
1955-68	*15.0*	*8.7*	*14.1*	*16.2*	*19.1*	*27.9*	*22.4*
Labour productivity							
1955-61	11.8						
1961-65	7.8	7.4	14.7	9.4		8.2	
1965-68[a]	15.6	9.2	18.0	16.8		21.9	
1955-68	*11.3*						
Wages and salaries							
1955-61	6.9	7.8	7.4		9.3	5.2	7.3
1961-65	9.1	9.8	9.1	7.3	8.7	8.4	8.0
1965-68	13.5	12.7	12.5	14.2	15.8	16.0	12.2
1955-68	*9.1*	*9.5*	*9.1*		*10.6*	*8.6*	*8.6*
Unit cost of manpower							
1955-61	—4.4						
1961-65	1.2	2.2	—4.3	—3.0		0.1	
1965-68[a]	—1.8	3.2	—4.7	—2.3		—5.8	
1955-68	*—2.0*						
Unit value of exports							
1955-61	0.1	—0.1	—4.8	—0.1		2.0	
1961-65	—1.6	—0.4	—2.4	—2.8		—5.2	
1965-68	1.0	0.2	—6.5	—0.5		1.8	
1955-68	*—0.2*	*—0.1*	*—4.5*	*—1.0*		*—0.3*	
Volume of exports							
1955-61	13.5	7.6	17.4	3.8		25.6	
1961-65	21.7	8.5	31.4	40.4		31.6	
1965-68	15.0	7.5	21.7	10.5		20.8	
1955-68	*16.3*	*7.8*	*22.5*	*15.6*		*26.2*	

SOURCE: GATT, *International Trade 1968*.

[a] Preliminary data.

In conclusion, the two factors mainly responsible for the growth of exports—the change in their structure and the increase in their capacity to compete—were not two separate factors. The greatest increase in competitiveness was observable in the products of the heavy and chemical industries, in line with the trend in world demand; these exports therefore expanded most rapidly both in absolute terms and in relation to total exports, which meant a change in the structure of exports in accordance with world demand. This analysis is summarized in the following diagram.

DIAGRAM REPRESENTING THE "VIRTUOUS CIRCLE" OF ECONOMIC DEVELOPMENT AND THE GROWTH OF EXPORTS IN JAPAN


High rate of saving by enterprises and amortization
Introduction of advanced techniques
Increasing scale of production
Heavier investment
Increasing supply of capital
Reduction in export prices
Increase in productivity
Increase in the capacity to compete
Improvement in quality
Increase in real income of workers
High rate of private saving
Bank financing
Rapid increase in exports
Increase in demand for durable consumer goods
Increase in demand for capital goods and intermediate products
Changes in the structure of exports in line with trends in world demand
Shift in the structure of manufacturing production towards heavy industry and chemicals
More intensive operation of the virtuous circle in heavy and chemical industries
Heavier demand for products of the heavy and chemical industries
Greater possibility of introducing new techniques and of financing the heavy and chemical industries

CHAPTER III

EXPORT EXPANSION POLICIES

A. GENERAL REMARKS

Now that the factors that were conducive to a high rate of investment have been examined and we have seen how the accelerating mechanism worked, it is time to look at the policy of the Japanese Government which, together with the efforts of the private sector, was responsible for initiating and directing the process.

The first point which should be emphasized is the fundamental importance of the basic criterion adopted by the Japanese Government in handling an economic system founded on the principle of free private enterprises in a domestic market protected from outside competition and in guiding it gradually and steadily towards planned liberalization. Keen domestic competition, combined with a technological gap between Japan and Europe and the United States, encouraged Japanese firms to introduce technological innovations and increase productivity, the process being accelerated by the planned and continuous introduction of foreign competition.

A free and highly competitive market came into being with the disbanding of the *zaibatsu*[13] and the subsequent passing of anti-trust laws and the setting up of an anti-trust committee. Although the Government was repeatedly called upon to take steps to reduce excessive competition, by restricting production, stabilizing prices, etc., and new financial consortia called *keiretsu* grew up, the important factor was that the Government ensured fair and equal treatment for individual enterprises and for large consortia, both as regards industrial policy as a whole and as regards financing, technological innovations, imports, etc., without allowing to stop competing with each other or permitting a single firm, or group of firms, to dominate an industry. Moreover, since the Government progressively introduced foreign competition into the domestic market as Japanese enterprises became more and more competitive, the latter found themselves obliged to continue making efforts to increase productivity by means of a higher rate of investment and the application of technological innovations.

Technologically, Japan was very far behind Europe and the United States. In the years preceding the Second World War and throughout the war itself, Japan was largely cut off from the cultural and scientific influence of the western world and the Government even prohibited the teaching of English and the use of words of western origin. In addition, a large proportion of the scientific and technical potential was mobilized for the production of raw materials and weapons. During this period, Japan naturally lagged behind the other industrialized countries in terms of scientific progress.

The absorption of foreign technology took place during the post-war years and resulted in the speedy elimination of the technological and scientific gap already referred to, thanks to the competition among enterprises which gave rise to a high rate of fixed capital investment.

The process was speeded up still further by the appearance of new financial consortia known as *keiretsu*.[14] Competition between different enterprises gave way to competition between *keiretsu*, which was all the fiercer because each one possesses its own bank, capable of mobilizing a considerable volume of personal savings for financing investment by the enterprise in the group.

Competition increased around the middle of the 1950s, when there was a boom in the Japanese economy which was connected with this same process; there were a number of reasons for this: (*a*) the end of the period of occupation by foreign armed forces, which enabled almost all sectors to develop more freely; (*b*) a return to levels of production and consumption conducive to personal saving, which in turn made it possible to finance industrial investment; (*c*) the expansion of exports and, as a result, greater capacity to import materials and capital goods in much larger quantities than before.

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[13] *Zaibatsu* was the name given to large financial consortia founded during the period following the restoration of the Meiji and owned by a small group of families. Major industries usually belonged to one of the five great *zaibatsu*.

[14] Although the *keiretsu* stems from the *zaibatsu*, its present function is quite different. The enterprises belonging to a *keiretsu* work in co-ordination with each other but they have great freedom of action. See, for example, Yoshikazu Miyazaki, "Rapid Economic Growth in Post-war Japan", *Developing Economies*, Tokyo, June 1967.

It was then for the Government to take steps to guide the process, particularly the rate and range of investment, so as to develop the economy along optimum lines and to give it the broadest possible scope on a free enterprise basis.

The channelling of investment was achieved through a comprehensive industrial policy which found its expression in indicative plans, laws and regulations, and in co-ordinated action between the State and the private sector, supported by adequate State financing, tax incentives, measures related to technological innovations, etc. Furthermore, the main aims of trade policy were the protection of national production against foreign competition, its gradual and selective liberalization, and the promotion of exports.

B. INDUSTRIAL POLICY AND THE ORIENTATION OF INDUSTRIAL INVESTMENT

In its industrial policy, the Japanese Government has given increasing importance to the heavy and chemical industries and, generally speaking, to all industries that require a high degree of technological development and seem most promising in terms of foreign and domestic demand for their products. This was not the case, however, for the five years following the Second World War, when the objective of industrial policy was to achieve an adequate supply of such basic requirements as electric power, coal, steel, maritime transport, etc. This policy was known as Top Priority Production Programme.

At the end of this period, there was a change in industrial policy, which was then aimed at promoting the development of the heavy and chemical industries and the introduction of technological innovations, though this only applied to a limited number of industries, as the Government came up against several adverse factors, such as lack of capital and foreign currency. Without policy of this kind, however, it would have been impossible to provide the other industrial sectors, at low cost, with the principal inputs which were the starting point of the general industrial boom that was to take place some five years later (around 1955).

In devoting its attention primarily to the industries needed to provide basic inputs for the heavy and chemical industries, the Government was aware that extensive investment in this field would indirectly affect allied industries. For example, investment in electric power supply not only lowered the cost of electricity for all industries but also generated a great demand for the materials required for power production; similarly, investment in maritime transport increased the demand for steel.

This policy was applied through five-year rationalization plans which covered the production of steel, coal, electric power, ammonium sulphate and synthetic fibres and was largely financed by the Development Bank of Japan; the result was that industries were able to introduce advanced high-productivity techniques. During this period, rationalization was responsible for providing an almost complete solution to the problem of the high cost of supplying steel and power which had previously made it difficult for Japanese manufactures to compete on foreign markets, despite an attempt to remedy the situation by means of a system of multiple exchange rates and subsidies. The success of these steps can be measured by the fact that, in 1955, at the end of the first five-year plan for steel production, steel ousted cotton fabrics from their position as Japan's major export. Another industry that benefited greatly from cheap supply of basic inputs was shipbuilding, which, after rationalization, began to operate on a more competitive basis in the world market.

Around 1955, the Government abandoned its policy of concentrating resources on a limited number of basic industries in favour of a more extensive industrial investment policy covering a wide range of heavy, chemical and other industries employing advanced technology whose products showed most promise in terms of domestic and foreign demand. This change in industrial policy was possible not only because the basic industries had already been rationalized but because they could now rely on more domestic and foreign resources owing to the availability of relatively abundant supply of foreign currency following the export expansion of the previous period; this meant that Japan could now import both highly advanced equipment and technology and the raw materials required by the wide range of developing industries. Furthermore, having reached a higher level of consumption in real terms than before the war, the Japanese were in a position to effect considerable personal savings, which they invested in the industries already mentioned.

Under the five-year plan drawn up in 1955—the first to be adopted officially—the modernization of export industries was set as the chief goal of industrial policy; machinery, chemical products and synthetic textiles were designated as "promising" industries for which long-term, low-interest loans were to be provided. Later, the Doubling National Income Plan which became effective from 1960 declared the manufacturing industry to be the leading sector for development, while emphasizing the growth of heavy and chemical industries as a "strategic" sector. It was decided that the Government could provide various inducements for these industries in the form of tax exemptions, supplementary investment through State institutions and other legislative measures. The plan also assumed a 10 per cent average annual increase in exports as the minimum required to offset the expected rise in imports as a result of their liberalization. An official document explaining how the liberalization policy was to be applied was also published in 1960.

In order to carry out the industrial policy enshrined in the economic plans, a series of legislative measures were adopted around 1955 to promote specially important industries and a bill was passed in 1952 in support of the rationalization of the manufacturing industry as a whole. The 1956 Machine Industries Development Law and Electronic Industry Development Law provided for co-ordinated action under the auspices of the Ministry of International Trade and Industry (MITI) so as to achieve the objectives set by the Government and authorized the waiving of anti-trust laws wherever necessary. As regards the petrochemical industry, MITI laid down a series of measures for its development in 1955 and announced further steps to promote synthetic fibres and resins. Development laws were also introduced for two new industries, synthetic rubber and aircraft,[15] which required special measures.

In addition, plans for rationalizing the basic industries continued into a second five-year period (the second five-year plan for the rationalization of steel industry and electric power production was introduced in 1956).

In contrast with the positive measures taken on behalf of the priority industries, those with less promising prospects were left to one side; in certain cases steps were even taken to slow down or reduce output, as in the case of textiles, which came under a law passed in 1956 immobilizing and eliminating a great deal of equipment.

Export expansion laws were also introduced during this period, such as the law on exports and the exports inspection law while a light machinery export promotion law was likewise adopted which favoured the products in which there were the best prospects for demand for export at the beginning of the period and which placed Japan in a better position to compete; radios, television sets, motor cycles, sewing-machines, watches, photographic equipment, light precision instruments, optical apparatus, etc.

All these measures for the development and orientation of industrial investment—described in greater detail below—were co-ordinated to fit in with the general lines of the above-mentioned industrial policy. A typical example of this policy of co-ordination was the official approval of purchasing contracts for foreign patents coupled, *inter alia*, with a recommendation that the development Bank of Japan should provide financial assistance, the concession of import quotas for the necessary materials and machinery and, in certain cases, protection from foreign competition. Commercial banks also gave preferential financial treatment to the production and commercialization of products manufactured on the basis of approved foreign patents.

Thanks to this intensive use of all available measures, technology, capital and imported materials and equipment were concentrated in the priority industries.

In practice, the direction industrialization took was determined not only by granting authorizations and permits along the lines already mentioned but also by means of countless suggestions, recommendations and pieces of advice proffered within the framework of the official plans and programmes. While these did not in any way place private enterprise under a legal obligation, they were accepted by it by virtue of its traditionally close cooperation with the Government. The main channel for this collaboration was the committees and permanent boards—of which there were over three hundred—set up in various branches of industry to study the guidelines of the industrial policy sector by sector and to establish a basis for the co-ordination of State and private action. These Government-sponsored committees comprise representatives of the major enterprises along with various experts and Government officials and are capped by a supreme body known as the Industrial Structure Council. The chief enterprises usually adopt important decisions only after prior consultation with the Government.[16]

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[15] Aircraft production reached a very high level in Japan during the pre-war years, when maximum annual output was 250,000 units, and the industry employed 800,000 workers. However, for seven years after the war the occupying forces prohibited the manufacture of aircraft.

The importance of this system of co-ordination between the private sector and the State was reflected in a Government bill[17] for the development of specially important industries which was aimed at institutionalizing the system for reasons of maximum efficiency, supported by such additional measures as tax inducements and special official financing, combined with the granting of priority loans by the commercial banks.

The main direct measures adopted for the promotion and orientation of industrial investments in Japan in the post-war period were: (*a*) authorization of the rapid amortization of industrial equipment; (*b*) revaluation of business assets; (*c*) authorization of special expenditure or of tax-exempt reserves; (*d*) various tax exemptions; (*e*) financing by the Development Bank and the Bank of Japan.

A new system was introduced in 1951, authorizing short-term amortization together with exemption from customs duties and a significant revaluation of business assets, and these measures were amplified by the law on the promotion of industrial rationalization (1952). The total amount of industrial machinery acquired under the special system of amortization between 1951 and 1955 was valued at more than 1,000 million dollars.

Several special types of amortization were authorized, but the two most important were: amortization over three years of 150 per cent of the value of the machinery, and amortization of 50 per cent of the value in the first year. In addition, favourable terms were granted for the amortization of industrial equipment to be used in experiments and research.

At the same time, there was a considerable revaluation of company assets in 1950, 1951-1952 and 1954-1955, which was of great significance since industrial equipment was greatly undervalued as a result of the inflationary trends in the five years following the Second World War. This revaluation enabled industrial concerns to establish greater reserves for the purpose of amortization, since the amount of such reserves is dictated by the declared value of industrial equipment. Thus, important reserves of tax-free funds were established.

The exemption from customs duties on industrial equipment and machinery imported for the rationalization of industry proved to be very effective. Total imports exempted under this system between 1951 and 1956 amounted to about 150 million dollars.

In the implementation of these measures, all of which were favourable to investment in industrial equipment, priority was given to the basic industries, and to the heavy and chemical industries, in accordance with the general line of industrial policy already analysed. In the first five years of the 1950s, 80 per cent of duty-free imports of machinery were for use in the industries producing steel, electricity, coal and petroleum products. In addition, machinery subject to special types of amortization was purchased for the machine-producing, steel, chemical and other industries. These industries accounted for 76 per cent of machinery subject to the special three-year amortization arrangements already mentioned.

At the same time, government loans granted through the Development Bank of Japan were of great importance and were mainly concentrated in four basic sectors: electric energy, maritime transport, steel and coal, in line with the rationalization plans for each of these industries. Of such loans granted between 1951 and 1954, 83 per cent went to these four sectors. The remaining Development Bank loans went to the machine-producing, shipbuilding, motor-vehicle and electrical industries, and to chemical industries, especially those producing ammonia, ammonium sulphate and synthetic fibres.

During the same period, 55 per cent of total investment in industrial equipment came from sources external to industry, one third being government funds. Although the proportion of government investment was not very great in absolute terms, it played an important role in the strategic industries already mentioned, not only because it was concentrated in those industries, but also because when the State decided to invest in specific enterprises, the commercial banks followed suit.

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[16] See, for example, chapter 6 of *The State and Economic Enterprises in Japan*, W. W. Lockwood, ed. (Princeton University Press, 1965), which contains an analysis of the relationship between the State and the private industrial sector in Japan, describing its post-war economy as a new kind of capitalism sponsored by the State. See also "Japan Special Survey", *The Economist* (London), issues of 27 May and 3 June 1967.

[17] Even though the bill was defeated in the Diet, the Council of Ministers approved a statement by the Minister of International Trade and Industry to the effect that the principle of co-ordination embodied in the bill would in future have to be adhered to in the implementation of industrial policy.

Thanks to this investment, production of capital and intermediate goods was 68 per cent greater in 1955 than before the Second World War, while production of consumer goods exceeded the pre-war level by only 28 per cent.

From 1955 to 1965 there were changes in the structure of investment in industrial equipment. In this period there was more investment in new industries than in basic industries, the six most important sectors being: electrical equipment, motor vehicles, electronics, the petrochemical industry, synthetic fibres and plastics. In only six years, investment in these industries increased twentyfold compared with the average for 1951-1955, and in 1961 they absorbed 21.6 per cent of the total investment in industrial equipment in Japan. This investment affected not only the industries to which it was directed but also related industries, and they had a snowballing effect on investment generally, as described in the official *Economic Survey of Japan.*

In the period under consideration, the existing system of fiscal incentives, the authorization of tax-free reserve funds and the special system of rapid amortization of industrial equipment were maintained. In addition to established methods of amortization, as from 1958, authorization was given for the amortization of machinery and equipment necessary for the introduction of new technologies. Total amortization in 1960 was ten times greater than in 1954. At the same time, export income was largely exempt from income tax, which also encouraged the development of new industries.

In line with the country's new industrial policy, the Development Bank of Japan started cutting down loans to the four major industries from around 1955 while stepping up these to such nascent industries as petrochemical and electronics and certain machine-producing industries. For example, the Bank provided between 14 and 21 per cent of investment in the petrochemical industry when it first started up in Japan (1958 and 1959). It also put up 40 per cent of the funds used to establish the synthetic rubber industry. At the same time, the commercial banks provided financing for these new industries because they were protected by the special laws referred to above.

Besides direct loans from the Development Bank, credit was also made available through the Central Bank of Japan by means of loans to the commercial banks which, because their own industrial loans generally exceeded the ceiling on loans established by their ratio to deposits by around 10 per cent, had to borrow from the Central Bank in order to make up the difference.

This method of indirect financing by the Bank of Japan became increasingly important. While resources provided directly by the Development Bank and other State financing agencies served to channel investment into Japan's priority industries, the Bank of Japan played a highly effective part in controlling the flow of industrial investment, which reacted immediately to any increase or decrease in its volume of loans to the commercial banks. This function of the Bank of Japan did much to solve the balance-of-payments crises that occurred almost periodically, whenever investment rose too fast.

Even though it was private initiative that governed financing by the commercial banks, the banks tended to give priority to investment projects supported by government measures and loans from the Development Bank. Moreover, Central Bank loans were always made on a fairly equitable basis so as to prevent specific *keiretsu* dominating the different industries.[18] If these had happened, investment in these industries would have been lower because of lack of competition, and the rapid economic growth that was maintained by the development of the heavy and chemical industries would not have been possible.

To sum up, the Government's industrial policy played a vital role in increasing Japan's export trade since it was behind the rapid and well directed operation of the "virtuous circle" described in the preceding chapter.

C. TRADE POLICY

Always giving top priority to export expansion as an ultimate aim, the Government concentrated its trade policy efforts on: (*a*) stabilizing the balance of payments; (*b*) protecting domestic production from outside competition and gradually liberalizing these protective measures; and (*c*) seeking favourable conditions in foreign markets through trade negotiations.

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[18] Consequently, every *keiretsu* (consortium) sought to cover the whole range of dynamic industries, which meant that they had to compete against each other and invest as much capital as they could obtain from their respective trade banks, which accumulated personal savings and borrowed from the Central Bank. In making these investments, they duly took into account the general lines of industrial policy laid down by the Government especially by the Ministry of International Trade and Industry (MITI) and the Ministry of Finance.

Because Japan, with its 100 million inhabitants and limited natural resources, has had to import food-stuffs and raw materials in order to maintain its level of industrial production and supply its people with vital necessities, stabilizing the balance of payments has always been one of the most difficult problems to solve.

At the end of the war, and in view of the dire shortage of foreign currency, the only solution was for trade to remain under State control. Five years later, however, this system was replaced by the foreign exchange budget system which was introduced under the foreign currency and foreign trade control law. While foreign trade was transferred to the private sector, imports had to comply with the provisions of the Government's foreign exchange budget, which imposed foreign exchange quotas for each product.

The shortage of foreign currency, so serious in 1950 when the system was introduced, continued to be grave during the first years of its operation, when the two fundamental principles of its operation were the maximum utilization of domestic resources and the best possible use of the limited amount of exchange available. In the energy sector, for instance, investment during the initial stage was concentrated on coal production, later to be replaced by hydroelectric energy: in both cases use was made of national resources. It was only towards the middle of the 1950s that a beginning was made with the intensive construction of thermo-electric plants fired by petroleum, which could at last be imported in large quantities as a result of the increase in exports. At the same time, steel production ceased being dependent upon a domestic supply of scrap-iron as large quantities of iron ore began to be imported.

Certain other industries followed similar paths. Calcium carbide, one of the main inputs of the synthetic fibres and resins industry, was produced from limestone, coal and electric energy, all of which were available in the country. This method was replaced later by the new petrochemical industry.

From the middle of the 1950s, the rapid rise in exports gradually brought a larger supply of foreign currency into the country, with the result that a more liberal policy was introduced which, as has been pointed out above, permitted massive imports of various materials and equipment. This did not by any means signify the end of the balance-of-payments problems, however. As investment and economic activity increased, so did the volume of imports and the balance-of-payments deficit, which, given Japan's dependence on foreign sources of supply, was only natural. This phenomenon has caused five serious crises since 1950, forcing the Government to take steps to stabilize the balance of payments. Direct measures such as import restrictions were avoided as far as possible, however, and indirect action was preferred, increasing the discount rate for bills and the bank-rate, for instance, and other monetary measures designed to slow down domestic economic activity temporarily. This brought about not only a slow decline in imports but also a fairly rapid boom in exports, since the lack of domestic demand provoked by these measures obliged Japanese firms to seek outlets for their products abroad.[19]

Attempts to reduce the input coefficient of raw materials and, above all, energy used in industrial production were highly successful, and this helped both to reduce the country's dependence on foreign resources and to cut down production costs.

These efforts were concentrated especially on reducing energy consumption. A system of energy consumption control was introduced in 1948 under the auspices of the Ministry of International Trade and Industry and later strengthened (in 1951), following the passing of an energy control law which brought more than 2,000 large factories under the direct control of more than 10,000 State-appointed experts. As a result, by 1961 over 61 per cent of petroleum consumption was controlled in this way. These measures combined with a larger scale of production made it possible to lower the input coefficient fairly quickly. Energy requirements for steel production, for example, dropped by 43 per cent between 1953 and 1959. In the same period, the volume of coke needed to produce a ton of steel fell by 23 per cent. A similar pattern was repeated in every industry.

In a word, the action that was taken to stabilize the balance of payments comprised not only direct measures such as customs tariffs or quantitative restrictions but also indirect measures of a different nature, designed to ensure the maximum utilization of domestic resources and to lower the ratio of raw material and energy inputs to output, thereby making the country less dependent on foreign resources. Although these indirect measures are really effective only as a long-term proposition, they are a very strong incentive to economic development, whereas direct measures hinder the normal working of the economy.

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[19] The best results were obtained during the period 1962-1965. Faced with a substantial balance-of-payments deficit (982 million dollars in 1961), the above measures were taken to depress the domestic economy for a while, with the result that the growth rate of the gross domestic product dropped from 10.7 to 8.2 per cent. During the same period, on the other hand, exports rose by 18 per cent annually.

Furthermore, the intensive introduction of new techniques combined with certain measures to protect national production strongly affected imports, many of which were replaced by domestic products. As early as 1960, according to the 1964 Economic Survey of Japan, production of goods by processes using imported techniques was equal in value to the country's total imports.

The tariff structure tended to encourage industrialization and above all, by establishing different import duties for different categories of products, to promote the development of the heavy and chemical industries. Whereas, apart from certain food-stuffs, basic commodities were duty-free or subject only to low tariffs of around 5 per cent, the customs duty on manufactured products was between 15 and 35 per cent during the early stages so as to protect domestic production. As has already been pointed out, however, machinery imported for certain industries and for purposes of rationalizing production and introducing advanced techniques was exempt from all customs duties. Quantitative restrictions imposed under the foreign exchange budget system also did much to protect and develop the new industries. In the process of fixing import quotas, essential products for industrialization received preferential treatment, while products in respect of which Japanese industry was not yet sufficiently competitive were allocated small quotas.

Although this process can, to a certain extent, be compared with the practice of import substitution in Latin America, there are certain fundamental differences. In the first place, there was very little foreign investment involved in the case of Japan, and import substitution was possible thanks to the introduction of advanced technologies. Secondly, because internal competition among Japanese enterprises was maintained throughout the post-war period and was accompanied by State quality control and by the gradual introduction of foreign competition, Japan found itself in a sufficiently strong competitive position within a relatively short time.

Thus, besides helping to relieve pressure on the balance of payments in a passive way simply by encouraging import substitution, the introduction of new techniques from abroad accompanied by the protection of domestic production contributed even further to solving the problem by boosting exports on a long-term basis.

In other words, what occurred in Japan while domestic production was protected was not merely import substitution; Japan was taking a step towards acquiring the capacity to compete. Consequently, protection from foreign competition was gradually and firmly dropped during the post-war period as national industries became more efficient, and this served as an incentive for Japanese enterprises to make their export products increasingly competitive on foreign markets.

Simultaneously with the entry into force of the foreign exchange budget system in 1950, a system of automatic authorization (known as the AA system) was introduced in respect of nationally produced goods which were considered sufficiently competitive. Automatic authorization was gradually extended, first to 48 products in 1950, then to 199 in 1952, and to 1,700 in 1960. By 1960 41 per cent of all Japanese imports were covered by the AA system, or by the very similar AFA system introduced that year. In 1964, the figure rose to 93 per cent, representing virtually the same degree of liberalization as had been reached by European countries two years before. The fact that Japan was slightly behind Europe was due to the special problems that had to be solved[20] and to the discriminatory treatment of Japanese products by certain European countries.

The removal of quantitative restrictions was speeded up between 1960 and 1965 since Japan was required to comply with the obligations imposed by article XI of the General Agreement on Tariffs and Trade as a result of its acceptance of article VIII of the Articles of Agreement of the International Monetary Fund, which prohibits restrictions on current international transactions for balance-of-payments reasons. Article XI of the General Agreement prohibits the application of quantitative import restrictions without waiver for the same reason.

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[20] One is the problem of Japan's agricultural sector. As the land cultivated by each rural family is somewhat less than in European countries, productivity is considerably lower despite the enormous strides that have been made—agrarian reform, transfer of labour to other production sectors, mechanization and intensive use of fertilizers and insecticides.

Japan's approach to this process of liberalization was planned step by step. Anticipating that quantitative restrictions would eventually have to be relaxed still further, the Government drew up its liberalization programme as early as 1960, and this is put into effect over the ensuing years. It thus enabled Japanese enterprises to take steps to comply with the planned liberalization programme and to make greater efforts to increase productivity and their capacity to compete.

The steady elimination of quantitative restrictions has moreover been accompanied by gradual reductions in customs duties, following a series of tariff negotiations, which now affect over 80 per cent of all products included in the Brussels Tariff Nomenclature.

Another important task at which the Japanese Government has worked unceasingly has been to improve the conditions of access of Japanese products to foreign markets. The loss of its former colonies and continental China as the traditional and tremendously important market for its goods[21] obliged Japan to look for new markets after the war. The difficulties that it came up against in doing so were not only of a general nature, such as establishing trade outlets, but derived from the discriminatory treatment which its products received from many countries in Europe and other regions.

Through GATT, the Government endeavoured to improve conditions of access for Japanese goods to new markets in general, and, above all, to put an end to this discriminatory treatment. The first step towards opening up new markets involved Japan's becoming a Contracting Party of GATT, for then it could, in theory, benefit from most-favoured-nation treatment. A description of the difficulties the country encountered in seeking and maintaining membership of GATT will therefore give a better idea of the efforts that it was called upon to make.

After the Second World War, Japan was governed for seven years by Allied troops, represented by the United States Armed Forces. The framing of economic policy and the conduct of foreign trade were naturally in the hands of the occupying forces, whose authorization was required even for the establishment of customs duties.

Because of the various difficulties encountered, it was over three years before agreement was reached between the Government of Japan and the occupying forces concerning tariff reform.[22] Finally, in 1951, the occupying forces approved the fourth tariff reform proposal put forward by the Japanese Government, which provided for very low customs duties,[23] with exemptions for several products; this gave rise to serious problems a year later when negotiations were initiated for Japan's accession to GATT, since there was no possibility of reducing the tariffs.

In the autumn of 1951 many nations signed the peace treaty with Japan, which thus recovered its independence. Subsequently, Japan requested permission to send an observer to the next session of the Contracting Parties of GATT, which was granted after lengthy discussion. Nine months later Japan made its first formal application for admission to GATT, having already been allowed to join the International Monetary Fund, the World Bank, FAO, etc. For one reason or another, however, the member States asked for more time to deal with this question.[24] The following year a special working group was set up within GATT to make recommendations on the Japanese application.

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[21] Japanese exports to its two former colonies and to continental China represented, respectively, 25 and 18 per cent of the total value of the country's exports between 1934 and 1936, whereas in 1965 its exports to the same areas only amounted to 8 per cent.

[22] The customs duties applied before the Second World War continued in force only for Japanese importers, while imports by foreigners were free of duty up to 1951, when a complete tariff reform was approved with the authorization of the occupying forces, which made this consent to the application of customs duties to imports by foreigners conditional upon the introduction of this reform.

[23] The fiscal revenue obtained from customs duties represented 1 to 3 per cent of the total value of imports in the five years following the reform, compared with 6 to 9 per cent before the war.

[24] At the initiative of the United States, most of the Contracting Parties of GATT agreed to grant "most-favoured-nation" treatment to the Federal Republic of Germany, before its accession to GATT in 1951. The United States took the opportunity to urge other nations to cease the discrimination against Japan which had been carried on since the pre-war period, requesting the same treatment for Japan as for Germany. In 1949 the United States Government proposed that consideration be given to the extension of most-favoured-nation clause to Japan, a proposal which met with a resounding defeat since it was rejected without discussion, in contrast to Germany's case, where the clause was applied even before its accession to GATT. An attempt was made to justify this refusal on the grounds of unfair competition, dumping, exploitation of labour, etc. (See, for example, Gardner Patterson, *Discrimination in International Trade, The Policy Issues 1945-1965*, Princeton, 1966, pp. 272-299.)

Once it had been demonstrated that Japan was fully entitled to be a member of GATT, there still remained the question whether the General Agreement provided adequate safeguards to protect the Contracting Parties against the "flooding of markets" by lower priced products from Japan.

Later, Japan was invited to participate in GATT, but without the right to vote, this was unprecedented and was not even envisaged in the General Agreement itself. At the same time a declaration, open for the signature of any country that wished to sign, stated that, pending formal accession by Japan and without prejudice to the countries' freedom of action on the question of full accession, their commercial relations with Japan would be based on the General Agreement. Japan made concessions in the case of 860 products, and twenty-four countries, including the United States, Germany and Italy, started to grant it most-favoured-nation treatment. Ten countries, however, including the United Kingdom, France, Belgium, Luxembourg, and some of the British Commonwealth nations, did not sign the declaration.

Three years later—in 1955—Japan started negotiations with seventeen signatories of the General Agreement, finally attaining the status of Contracting Party. Nevertheless, the countries listed above and four other nations still refused to apply to Japan the most-favoured-nation clause, invoking article XXXV of the General Agreement, under which this treatment need not necessarily be applied to new Contracting Parties.

In 1960 Japan requested that the whole situation be reviewed, which resulted in a report[25] indicating that the discrimination applied to Japan by certain countries was contrary to the spirit of GATT. In order to solve the problem, Japan entered into a series of bilateral discussions which led to most of the major Western countries[26] agreeing not to invoke article XXXV of the General Agreement. This did not mean, however, that the discrimination against Japan would disappear completely, since many of the bilateral agreements included safeguard clauses and lists of "sensitive" goods subject to quantitative restrictions or to "voluntary" restrictions by Japan.

In 1960 the discriminatory restrictions imposed on imports from Japan covered 233 products entering the United Kingdom, 357 entering France, 122 entering Italy, 34 entering the Federal Republic of Germany, and 40 entering the Benelux countries. Even today, some important discriminatory restrictions on Japanese products are still in force, and about thirty countries, including Austria, Portugal, Spain and some African States, continue to apply article XXXV of the General Agreement to Japan.

Moreover, as stated above, even for those products which were not subject to discriminatory treatment, there were still barriers in the form of voluntary restrictions which Japan had to accept in exchange for the elimination of discriminatory treatment. In the case of the United Kingdom, for example, Japan exercises a voluntary control over sixty-four products. These voluntary restrictions have also been requested by other countries which did not impose discriminatory restrictions on imports from Japan. Voluntary restrictions were imposed on sixty-seven exports to the United States and ninety-two to Canada.

Compared with the original situation, however, the conditions of access by Japanese products to foreign markets have improved significantly as a result of the multilateral and bilateral negotiations in GATT. If no action had been taken in that respect, institutional barriers would have restricted the expansion of Japan's exports, in spite of its capacity to compete.[27] It is worth noting that the Japanese Government was successful in its efforts because of its faith in the liberalization of international trade and in the importance of the basic principle of GATT. For this same reason it exercised no discrimination against any of the Contracting Parties of GATT and participated effectively in the multilateral negotiations carried on by GATT.

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[25] GATT, *Basic Instruments and Selected Documents, Tenth Supplement* (Geneva, 1962), pp. 69-74.

[26] The United Kingdom suspended the application of article XXXV in 1963, and France and Benelux did so in 1964.

[27] Thanks to the improved conditions of access, Japan's share in Western Europe's imports of manufactured products increased from 0.8 per cent in 1955 to 2.3 per cent in 1968, although it remained a marginal supplier of that region.

CHAPTER IV

TECHNOLOGICAL PROGRESS AND EXPORTS

A. POLICIES GOVERNING FOREIGN INVESTMENT AND THE INTRODUCTION OF ADVANCED TECHNIQUES IN JAPAN

In the first place, it should be borne in mind that direct foreign investment has not played a very important part in Japan's economic development process; even in recent years it has averaged less than 100 million dollars annually, or below the level of Japan's direct investment abroad. In 1966, the net balance of United States direct investment in Japan was only 756 million dollars,[28] compared with 5,652 million invested in the United Kingdom, 3,077 million in the Federal Republic of Germany and 1,758 million in France. The small scale of United States investment in Japan —although the United States is the largest foreign investor—will be grasped more easily if this figure is compared with the 9,854 million dollars it has invested in Latin America. Moreover, there are very few companies in which direct foreign investment represents more than 50 per cent of the total capital.

This situation is due to the special nature of the Japanese Government's foreign investment policy. Traditionally, Japan has followed a fairly restrictive policy with respect to direct foreign investment in general, and particularly any investment that carries with it participation in the management of enterprises, *inter alia*, for fear of a lack of interest in exporting when the company's head office is already supplying the market in the country of origin.[29]

This policy was based on two important laws which came into force in 1950: the foreign investment law and the foreign exchange and foreign trade control law.

The former established various conditions for foreign investment in Japan, giving preference to investment calculated to improve the balance-of-payments position. Under the terms of this law, foreign firms wishing to make a direct investment or to purchase shares in Japanese companies which would give them a share in the company management, must obtain the Government's authorization to do so. The Japanese Government has approved virtually no direct foreign investment amounting to more than 50 per cent of the total capital of a company. The only exceptions to this principle were those cases in which foreign enterprises renounced their right to repatriate the capital invested or to remit their profits to the country of origin, in which case the Government's authorization was not required.

At the same time the foreign exchange and foreign trade control law established a highly restrictive system for foreign exchange transactions based on the centralized control of its distribution. Under the terms of this law, foreign exchange obtained from exports had to be sold to special banks within a period of ten days. The centralized exchange was distributed according to the government foreign exchange budget, in which quotas were established for the different categories of imports, priority being assigned to the payment of royalties on licences and other payments required for the introduction of foreign techniques.

These two laws effectively promoted the introduction of foreign techniques by means of contracts for the acquisition of licences and for the use of manufacturing know-how, since, in the first place, the measures restricting direct foreign investment did not encourage the introduction of know-how by that means, and, secondly, the foreign exchange and foreign trade control law allocated preferential quotas for the payments of royalties under the above-mentioned contracts.

As the result of this policy, 8,500 technical agreements have been signed with foreign companies in the past fifteen years (1951-1966). Annual payments abroad for the use of licences and know-how amounted to nearly 200 million dollars in 1966. From 1949 to 1967 these payments totalled 1,463 million dollars, of which 90 per cent was for technical contracts lasting more than one year (see table 11). The total amount paid abroad for the use of licences has always been higher than direct foreign investment.

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[28] This figure, taken from the *Survey of Current Business* (September 1967, p. 42) published by the United States Department of Commerce, is higher than the net direct investment in Japan of all foreign countries, including the United States, in the period 1951-1967, according to the figure published by Japan's Economic Planning Office in the *Economic Survey of Japan, 1967-1968* (Tokyo, 1968), pages 100 and 290 of the Japanese version.

[29] The capital-exporting countries have raised objections to this restrictive policy, especially in recent years. In discussions within OECD, fuller liberalization has been requested for capital transactions, including direct foreign investment and the introduction of new techniques. The Japanese Government is currently carrying out a programme to achieve such liberalization.

The Government did not raise much opposition to the approval of these contracts, but it took care to see that the Japanese firms obtained the best possible conditions, particularly as regards exports of products incorporating imported know-how, reserving for them at least the right to export those products to the countries of south-east Asia.[30]

The following points were also taken into account:

(*a*) That an adequate percentage should be established for royalties;

(*b*) That the period of the contract should be as short as possible;

(*c*) That the contracts should not include provisions whereby the firms purchasing the know-how must make available to the firm providing the know-how all the improvements they may introduce in it;

(*d*) That there should be no prohibition on the production of articles similar to those manufactured with the patented know-how.

The new techniques obtained through technical contracts were introduced mainly in the new dynamic industries; 58 per cent of these contracts covered machinery and equipment-producing industries (33 per cent for electronic industries, 6 per cent for industries producing transport equipment, and the remaining 61 per cent for other industries including those manufacturing industrial equipment), 21 per cent covered chemicals, 9 per cent metallurgy, and 3.9 per cent textiles.

The number of direct foreign investment projects approved was much less than the number of contracts signed covering patents and the use of manufacturing processes (technical know-how).

Between 1950 and 1967, 259 new enterprises were established with foreign share capital, bringing the total number of enterprises in which there is foreign investment to 380.[31] Foreign share capital in 31 per cent

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[30] See, for example, "Japan; Special Survey", *The Economist* (London, 27 May and 3 June 1967).

[31] This does not include foreign enterprises or mixed enterprises that have waived their right to repatriate invested capital and profits. There were 319

Table 11

JAPAN: INTRODUCTION OF FOREIGN TECHNICAL KNOW-HOW

	1949-54	*1955-59*	*1960-64*	*1949-67*	*1949-67*
		Number of contracts			*Percentage*
		A. *For more than one year*			
Electrical equipment and electronics	105	131	443	922	19.3
Transport equipment	28	34	67	168	3.5
Other machinery	113	115	740	1 580	35.0
Metals and metal manufactures	38	73	124	383	8.0
Chemicals	83	107	407	981	20.5
Textiles	24	20	67	184	3.9
Petroleum	15	49	42	103	2.1
Non-metallic mineral products	10	6	40	93	2.0
Pulp and paper	6	4	28	52	1.1
Construction	7	17	18	66	1.4
Other industries	17	21	63	241	5.0
TOTAL	*446*	*577*	*2 039*	*4 773*	*100.0*
		B. *For less than one year*			
TOTAL	*510*	*793*	*2 085*	*5 083*	
		Payments under contracts *(millions of dollars)*			
Contracts for more than one year	38	184	549	1 340	91.5
Contracts for less than one year	11	21	64	124	8.5
TOTAL	*49*	*206*	*613*	*1 463*	*100.0*

SOURCE: Science and Technology Office, Report on the introduction of foreign techniques, 1967.

of both old and new enterprises amounted to less than 25 per cent of the total capital, while only 13 per cent of these enterprises secured authorization for a proportion higher than 50 per cent, even though most of them were established after the Government began a phased programme to liberalize foreign investment in 1963.

Foreign investment provides two important elements for development: advanced technology and a supply of foreign exchange for industrialization. Because the volume of direct foreign investment was small, it was necessary to build up the supply of foreign exchange by means of external loans, chiefly loans from official financial institutions, while technological know-how was obtained by the means described above.

According to figures supplied by the Japanese Economic Planning Agency,[32] the total value of the gross inflow of foreign loans between 1955 and 1967 was 3,068 million dollars, while over the same period the total value of gross direct foreign investment was 522 million. The proportions remain the same, however, even if the amortization payments are discounted: the net inflow of foreign loans falls to 1,706 million dollars, and net foreign investment to 467 million. Thus, direct foreign investment represents only 17 per cent of total external financing (net inflow of foreign capital), including foreign bond issues and other indirect foreign investment apart from external loans and direct investment (average for the period 1955-67).

Furthermore, external capital inflows only reached a high level in the first four years of the 1960s. Before 1960, net external financing fluctuated between 50 and 150 million dollars, while the value of outgoings of Japanese capital in respect of official and private loans and direct investment abroad was close to the same figure.

Between 1961 and 1964, net annual external financing rose to some 500 million dollars, attributable, *inter alia*, to the extraordinary increase in foreign loans and bond issues, while the net outflow of Japanese capital almost doubled, although it increased less rapidly than net external financing. Hence, during those three years, Japan was a net importer of capital. However, over the next three years (1965-1967), owing to the huge rise in amortization payments, which amounted to some 450 million dollars annually and approximately equalled the value of new foreign loans, net external financing fell to below the level recorded in the years prior to 1960. Moreover, since capital exports (net outflow of Japanese capital) rose more rapidly in the period 1965-1967 compared with 1961-1964, Japan became a net exporter of capital.

Most of the foreign loans granted to Japan came from official institutions, chiefly the World Bank and the United States Export-Import Bank. From 1961 onwards, inflows of foreign capital were swelled by bond issues abroad, mainly in the United States, although capital from this source shrank rapidly from 1964 onwards, owing to the measures taken by the United States to protect its balance of payments.

Lastly, it should be noted that the major part of official foreign loans was used for infrastructure projects, and that the share of foreign capital in industrial investment was small, amounting to only 1.2 per cent of total industrial capital and not more than 2.5 per cent of total investment in industrial equipment.

B. ADAPTATION AND IMPROVEMENTS OF IMPORTED TECHNIQUES

One of the most striking features of the introduction of techniques in Japan is their improvement and adaptation to the particular conditions prevailing in the country. It often happens that, after a certain period, plants originally constructed on the basis of foreign models raise their production capacity by improving and adapting imported techniques without making much additional investment. At the level of the economy as a whole, this has brought down production costs considerably in relation to techniques from other countries where the factors of production are available in different proportions, i.e., manpower is scarcer and therefore more expensive.

Since this has happened in nearly all Japan's industries, it is difficult to analyse it exhaustively in quantitative terms. Some examples can be given, however.

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such enterprises, known as yen-base enterprises, engaged for the most part in commercial or services activities. Most of the 144 enterprises of this type which specialize in manufacturing are relatively small. Petroleum refining is one of the few branches in which foreign capital has had a substantial share. (Ministry of Foreign Affairs, *Foreign Investment in Japan*, 1968.)

[32] Economic Planning Agency, *Economic Survey of Japan 1967-1968* (Tokyo, 1968), Statistical annex, tables 38, 39 and 40 (Japanese text pages 290-291).

In the electronics industry, although there have been important inventions and discoveries, such as Ezaki's diode and the high-grade materials obtained for the manufacture of transistors and diodes, it was necessary to import some foreign techniques for the mass production of transistors, diodes, and various electronic articles based on the components.

It should be noted, however, that more than 70 per cent of the imported techniques were modified and improved in Japan.[33] In the 1967 official survey of Japan's foreign trade, it was stated that precisely this capacity for absorbing and improving techniques had enabled Japan's electronics industry to expand and turn to the export market. A case in point was the use of transistors and diodes, originally invented for industrial purposes, in household appliances.

In the shipbuilding industry, although foreign technical improvements were introduced, there was also great internal technological progress, which led to a combination of methods that proved more efficient than those used in other countries. Original techniques evolved in Japan include the rationalization of shipbuilding by means of the block system, the improvement of electric smelting processes, the adoption of economic models for tankers, etc., which reduced both the costs and the time involved in shipbuilding.

The importance of Japan's capacity to absorb techniques is clear if the contribution of technological progress to the increase in productivity is compared with the scale on which foreign techniques were introduced. Although the contribution of technological progress to productivity was greater in Japan than in other industrialized countries (see table 7), Japan paid less for contracts covering the introduction of know-how than the Federal Republic of Germany, and practically the same as other European countries.[34] In some developing countries, too, the costs incurred in importing technical know-how are considerable in relation to the amount spent by Japan. In Brazil, for example, they amounted to 155 million dollars between 1959 and 1964, while Japan's expenditure was 387 million dollars over the same period.[35]

The high capacity for absorbing and improving foreign techniques, and Japan's original contributions, are closely related to the high level of general education, the large numbers of university-trained engineers and technicians, and the plentiful supply of skilled manpower, quite apart from the government measures and private efforts to promote technological progress.

Seventy per cent of all Japanese children receive education up to eighteen years of age, and 25 per cent of these graduate from universities or follow short university courses, most of those attending the latter being women.

Statistics prepared by OECD[36] show that Japan's expenditure on technological and scientific research in 1963 amounted to 1.4 per cent of the gross national product, or the same proportion as that spent in the Federal Republic of Germany and Sweden, more than in Italy, Canada and Belgium, and less than in other industrialized countries. Nevertheless, Japan ranks second in the western world as regards the number of its technological and scientific research workers: 187,000, compared with 697,000 in the United States and 160,000 in the United Kingdom.

The Science and Technology Council is the principal agency concerned with fostering technological progress in Japan. At the ministerial level, the Science and Technology Office adopts measures designed to promote internal technological progress in accordance with the lines laid down by the Council. In addition, the Industrial Technology Institute, which is sponsored by the Ministry of International Trade and Industry, is responsible for developing new techniques through experimental research, disseminating information about such techniques and providing technical assistance, and also for such activities as standardizing industrial norms, controlling the use of energy, etc., all of which are closely related to internal technological progress.

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[33] Ministry of International Trade and Industry (MITI), *Official report on foreign trade 1967* (in Japanese), Tokyo.

[34] Statistics supplied by Japan's Science and Technology Office show that in the seven years from 1960 to 1966 the Federal Republic of Germany paid a total of 1,171 million dollars under this head compared with 971 million dollars paid by Japan. (Science and Technology Agency, *Annual Report on the introduction of foreign technologies, 1967.*)

[35] According to figures obtained from the Banco do Brasil and included in the study by Fernando Fajnzylber, *Estudio de algunos aspectos básicos para la formulación de una estrategia de exportación de productos manufacturados en Brasil*, 1969. The author of this study states that no significant differences are observable between the values (coefficients of the costs involved in the transfer of know-how in relation to the gross domestic product) for Brazil and Japan, that for every dollar spent in purchasing know-how Japan's industry spends four on developing its own technology, and that the situation in Brazil appears to be radically different in this respect.

[36] OECD Observer No. 30, October, 1967.

Private enterprises have also made tremendous efforts to improve their technological capacity. Generally speaking, the sectors which have acquired most foreign know-how spent most on industrial technological research and development.[37] Large-scale enterprises established central laboratories for basic and applied research and schools for training their workers.

It is interesting to note the way in which advanced techniques were adapted to local conditions, and how the unemployment that might have been feared was avoided, while in fact both employment and productivity increased.

The reasons for this were the enormous expansion of industries requiring advanced techniques as well as considerable labour, and the different methods of introducing advanced techniques in large-scale enterprises on the one hand and in small- and medium-scale industries on the other.

Examples of the first point are once again the electronics and shipbuilding industries, in which Japan enjoyed the comparative advantage of being able to combine its relatively plentiful manpower with technological progress, thus placing this industry on a more competitive footing than others. A similar situation was observable in the manufacture of light machinery and precision equipment, the motor-vehicle industry, and other sectors.

The second point is very important in view of the dual structure of manufacturing in Japan.

In broad terms, major enterprises invested considerable sums and used advanced techniques in those industries that were most capable of producing on a large scale; hence Japan has a great many enterprises that are as large as or larger than European enterprises in terms of capital invested per worker. In contrast, investment in small and medium-sized enterprises was always smaller and they continue to absorb a very high proportion of labour, since they are industries in which substantial investment and larger-scale production have less effect.

For example, while the major enterprises invested large amounts from the outset in modernizing steel production by installing huge blast-furnaces, hot strip mills, etc., the small and medium-sized industries producing steel products continued to absorb a large proportion of the labour force.

The textile industry provides an even clearer example. Although the manufacture of synthetic fibre, which requires substantial investment and very modern techniques, absorbs less manpower than the production of cotton fibre, millions of small and medium-sized dyeing plants and spinning mills now using the new material continued to employ large numbers of workers.

In general, the sectors which were able to take full advantage of the new techniques were fully modernized, while those in which it was still advantageous to use considerable labour and less capital maintained the traditional system of production. In the latter field, the large-scale industries left the field open to the small- and medium-scale industries and did not compete with them.

Consequently, in the process of rapid economic development and ensuing structural changes in the economy in favour of the heavy industries and chemicals, there was no question of the large enterprises benefiting at the expense of the small- and medium-scale industries, and in both light industry and in the heavy and chemical industries, the two types of enterprises expanded together (see table 12).

Moreover, small- and medium-scale industry was able to use ever cheaper and better materials and basic inputs (steel, electric power, petroleum products, etc.) produced by the large-scale industries, and they in turn supplied the components and materials required by the large industries, thus increasing their scale of production as the enterprises which absorbed their products expanded.

At the same time, as the small- and medium-scale enterprises became more efficient and labour scarcer, they were gradually compelled to introduce technological innovations and increase their investment. Although these enterprises were unable to invest as much as large-scale enterprises during the 1950s, in some of the ensuing years their investment grew more rapidly. For example, the amount invested by small- and medium-scale enterprises (with under 300 workers) in industrial equipment and machinery rose by 13 per cent between the three-year period 1961-1963 and 1964-1966, which was faster than the rate re-

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[37] See C. H. G. Oldham, C. Freeman and E. Turkcan, "The transfer of technology to developing countries, with special reference to licensing and know-how agreements" (TD/28/Supp.1, November 1967), prepared for the second session of UNCTAD.

Table 12

JAPAN: MANPOWER EMPLOYED AND VALUE ADDED IN MANUFACTURING, 1956-1966

	1956			*1961*			*1966*		
	Light industry	*Heavy industry and chemicals*	*Total*	*Light industry*	*Heavy industry and chemicals*	*Total*	*Light industry*	*Heavy industry and chemicals*	*Total*
					Number of persons employed (thousands)				
Plants with up to 299 workers	3 066	1 306	4 372	3 844	2 108	5 951	4 647	2 530	7 177
Plants with 300 workers or more	633	1 043	1 676	892	1 907	2 800	1 006	2 109	3 115
TOTAL	*3 699*	*2 346*	*6 048*	*4 736*	*4 015*	*8 751*	*5 653*	*4 639*	*10 292*
					Percentages				
Plants with up to 299 workers	82.9	55.6	72.3	81.2	52.5	68.0	82.2	54.5	69.7
Plants with 300 workers or more	17.1	44.4	27.7	18.8	47.5	32.0	17.8	45.5	30.3
TOTAL	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
					Net value added (percentages)				
Plants with up to 299 workers	65.6	38.0	51.1	67.5	35.1	47.9	71.8	39.4	53.5
Plants with 300 workers or more	34.4	62.0	48.9	32.5	64.9	52.1	28.2	60.6	46.5
TOTAL	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

SOURCE: Economic Planning Office, *Economic Survey of Japan, 1968-69* (Tokyo, 1969) (estimates based on industrial censuses).

corded by large-scale enterprises.[38] Purchases of second-hand machinery by small- and medium-scale enterprises declined in proportion to their total investment in industrial equipment.

At the same time, the transfer of know-how between the large-scale and the small- and medium-scale enterprises was intensified, and it involved a total payment of 1,700,000 dollars over the two years 1966-1967. There has also been an increase in the transfer of know-how from small- and medium-scale enterprises to large-scale enterprises, as a result of the technological progress made by the former, which received the equivalent of 660,000 dollars from the latter during the same period.[39] Since there is also a free exchange of know-how between the two categories of industries, it will be realized that there is a sizable volume of technological co-operation between enterprises with different production scales, favouring the smaller enterprises in particular.

The accelerated growth of investment and the technological progress made in the smaller enterprises had very important results: there was a larger increase in productivity per worker in the small- and medium-scale industries than in the large-scale industries during the years 1960-1965, while the opposite had been the case in the period 1955-1960 (see table 13).

The technological progress and investment in small- and medium-scale enterprises was closely related to the development and increase in demand of the large-scale enterprises, which enabled them to specialize increasingly in a limited number of articles.

Two highly important measures were the introduction of quality control and production control. This had the effect of improving the quality of the products and rationalizing the production system through the vertical integration of manufacturing, which, together with the introduction of advanced techniques, lowered production costs for a number of articles.

The manufacture of the sewing-machine is a case in point. Most plants producing these machines were small- or medium-sized, but when official production standards were established for its components, most enterprises specialized in the production of a small number of parts; this enabled them to slash their production costs, since the production process in each enterprise was simplified and specialized machines were introduced to replace multi-purpose machine-tools. For example, to manufacture a single component of the sewing-machine in Japan, a special machine was constructed which operates more than twenty drills simultaneously in three directions. With the sharp fall in production costs, the value of exports rose from 1 million dollars in 1949 to 33 million dollars in 1951.

The same process was observable in other industries, particularly those assembling a large

Table 13

PRODUCTIVITY INCREASE IN RELATION TO SIZE OF ENTERPRISE

(*Percentages*)

	1957-61	*1961-66*	*1957-66*
Heavy industry and chemicals:			
Large-scale enterprises (300 workers or more)	155.9	161.4	251.6
Small- and medium-scale enterprises	139.8	171.3	239.5
Manufacturing industry as a whole:			
Large-scale enterprises (300 workers or more)	149.3	159.9	238.7
Small- and medium-scale enterprises	143.8	171.1	246.1
All enterprises	151.9	161.6	245.1

SOURCE: Ministry of International Trade and Industry (MITI), study on small- and medium-scale enterprises, 1969 (based on industrial censuses).

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[38] Economic Planning Office, *Economic Survey of Japan, 1967-68* (Tokyo, 1968), p. 207.

[39] Economic Planning Office, *Economic Survey of Japan, 1969*, p. 136 of the Japanese version. In this case, large-scale enterprises are considered to be those with a capital of over 500 million yen (approximately 140 million dollars), and small- and medium-scale enterprises those with a capital of less than 50 million yen (14 million dollars).

number of components, such as the manufacture of photographic apparatus, optical and precision instruments, electronic equipment, motor-scooters, motor vehicles, etc.

An important feature of this process is that, in spite of substantially raising productivity, a relatively small investment is required, although it is essential that all the enterprises concerned should pool their efforts.

The Government launched a strong campaign to secure such integration, the most important measure being to control and standardize the quality of manufactured products. Although official production standards had been established even before the Second World War, the government agency set up immediately after the end of the war was extremely active and in four years it established standards for over 2,100 articles, most of which were subject to the quality control system for exports. In 1949 the industrial standards law was approved with the purpose of expanding activities in this field, and 7,000 standards have been established to date.[40]

It is worth noting that the standardization process in Japan has been carried out by the Government, while in the United States, the United Kingdom and other countries this task has been performed by private institutions. Another important point is that the standards are periodically modified (usually every three years) and the requirements are made increasingly stringent.

Furthermore, the Government, with the private sector's co-operation, launched a long and continuing campaign to introduce quality controls in plants on the basis of production standards, at the same time introducing a new system for organizing production on the basis of intensive studies of each production process in line with the new methods developed in the United States.

One of the results of the greater specialization and vertical integration thus achieved was the higher percentage of indirect exports of products manufactured by the smaller industries. According to an input-output study, moreover, transactions between large-scale enterprises and small- and medium-scale enterprises were intensified.

Lastly, as a result of the very special process that has taken place in Japan, over the past fourteen years there has been a faster parallel increase in the manpower used by manufacturing industry and in labour productivity than in any other country (see table 4).

Between 1953 and 1967 the number of employed persons rose at a cumulative annual rate of 6.6 per cent, the most rapid increase being in the first half of the period, when the rate was 8.7 per cent. From 1955 to 1960, in spite of the huge investment in such sectors as the electronics industry and metal-transforming, particularly the manufacture of precision machinery, there was even a drop in the capital-labour coefficient on account of the mass absorption of workers.

To sum up, Japan's large-scale enterprises made great technological progress, particularly in sectors involving the heaviest investment, the most advanced techniques and the largest scale of production, while its small- and medium-scale enterprises made intensive use of manpower while it was still relatively abundant, and then achieved steady technological progress together with greater vertical integration with large-scale enterprises. In short, Japan efficiently adapted advanced techniques to its own particular conditions and improved them considerably.

C. TECHNOLOGICAL PROGRESS AND THE EXPANSION OF EXPORTS

It is difficult to assess the effect of technological progress on the expansion of exports in quantitative terms, but the importance of the new products in the growth of Japan's exports will give some idea. The products which were first launched on the world market after 1951 came to account for 13 per cent of Japan's total export within ten years. In addition, the entire share of such products, none of which amounted to as much as 5 per cent of total exports in 1955, rose from 5.6 to 28 per cent in ten years.

Moreover, the goods produced through the direct application of imported know-how reached 12 per cent of total export in 1960, despite the restrictions imposed on exports of these goods in the contracts covering the sale of patents. Notwithstanding the Government's efforts to eliminate this type of restriction, 53 per cent of the contracts covering patents and the transfer of know-how signed before 1960 contained provisions limiting exports of the goods concerned. The situation became even worse later, since 68 per cent of the contracts signed between 1962 and 1964 included restrictive clauses (in 21 per cent exports were prohibited, and in 69 per cent they were permitted only to Formosa and Korea).

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[40] There are at present 2,000 industrial production standards committees for the different groups of products, which comprise some 16,000 experts.

Nevertheless, the introduction of foreign techniques had impressive effects on some sectors, such as the electronics industry; products of this industry based on imported techniques and their adaptation to local conditions accounted for 50 per cent of total electronics exports in 1960. This was a higher percentage than in production for the domestic market, which was only 30 per cent in the same year. This gap had gradually widened since 1955. A similar situation was observable in the chemical, steel and other industries.

Technological progress, especially through the introduction of foreign techniques and their improvement and adaptation, has had incalculable effects, notably through increasing the productivity of Japanese industry in general (see table 7) and placing it on a more competitive footing in the world market. The products which reflect the characteristics of Japan's technological progress fall into three groups:

(*a*) Products of the heavy and chemical industries whose manufacture is highly capital-intensive and required advanced techniques;

(*b*) Products of the heavy and chemical industries whose manufacture requires considerable manpower and the use of advanced techniques; and

(*c*) Products of light industry.

The products in the first group—steel, fertilizers, synthetic fibres and other products of the chemical and petrochemical industries, etc.—have always contributed to the rapid expansion of exports and they account for a large share of Japan's total exports. They are industries in which rationalization programmes (steel and fertilizers) and development programmes (petrochemical and other industries) involved heavy investment. The reduction in costs obtained through these programmes and as a result of technological improvements helped to step up exports. In some cases Japan's technological progress was a decisive factor in increasing its capacity to compete.

The use of the LD converter for steel production was decided upon after lengthy experimentation which proved it to be the most productive method yielding the best results. Japan is the country where this process[41] has come to be used most widely, and it accounts for the Japanese steel industry's great competitive capacity. Steel exports have risen at an annual rate of 14.1 per cent during the last fifteen years.

The method of producing urea, the most important artificial fertilizer, is essentially Japanese also. In the period 1957-1967 exports of urea rose at a cumulative annual rate of 23 per cent; at present this product represents 50 per cent of Japan's exports of nitrogenous fertilizers. Licences for the use of Japanese patents for the production of urea have been sold to nineteen countries. Of the synthetic fibres, vinyl is the result of Japanese technology and its exports increased during the 1950s.

Products in the second group require both advanced techniques and considerable manpower. Typical examples are electronic household appliances, cameras, optical equipment and precision instruments, sewing-machines, motor cycles, some industrial machinery, etc. Transport equipment such as ships, passenger cars and railway coaches have similar characteristics but require substantial investment. Nevertheless, their manufacture requires more manpower than the industries in the first group.

Technological progress, the larger production scale of vertical integration played an important part in these industries. Japanese technology helped to enhance their competitive capacity, particularly in the case of industries producing electronical and optical equipment, sewing-machines, motor cycles, etc., while significant improvements were introduced into the technical processes imported by some sectors, such as the electronics industry.

Exports of these industries were growing more rapidly than those of products in the first group. Exports of radios, for example, rose from 18 million dollars to 344 million, or 35 per cent annually, in the ten-year period 1957-1967, and exports of cameras increased by 23 per cent over the same period. Sewing-machines, which had already reached a fairly high level in 1957 (45 million dollars) climbed to 101 million in 1967. Exports of motor cycles rose from one million to 176 million dollars in the same period.[42]

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[41] When the idea of the LD converter first emerged in Australia, Japan's steel producers started immediately to develop economic production methods. Sixty-six converters have now been installed and their output amounts to 70 per cent of Japan's total steel production. The techniques developed in Japan were exported to a number of countries.

[42] Exports of products of the metal-transforming industry and allied products also grew rapidly (18.2 per cent annually); with some exceptions, these articles are manufactured by the small- and medium-scale industries. The cheap supply of steel and non-ferrous metals and the relative abundance of labour contributed to this expansion.

Japan's greater specialization in these industries is borne out by a comparison of the composition of its exports with that of other countries, according to the classification indicated above and in table 14. Official statistics[43] show that products in group (*b*), excluding transport equipment, represented 30 per cent of Japan's total exports and 52 per cent of the total value of exports of the heavy and chemical industries, while the corresponding proportions for the Federal Republic of Germany, France and Italy were around 30 per cent. In contrast, products in group (*a*), including transport equipment, represented only 28 per cent of total exports from Japan, compared with over 45 per cent of those of the three European countries considered.

This difference is even more pronounced if ships, whose characteristics are somewhat similar to those of the products classified in group (*b*), are excluded from group (*a*). Shipbuilding is one of Japan's most important industries, accounting for half the world's output. Exports of vessels rise 11.9 per cent annually during the period 1957-1967, and in 1968 their value was as high as 1,080 million dollars.

This comparative analysis indicated that Japan has specialized more than other countries in the relatively labour-intensive heavy and chemical industries and in light industries.[44]

In these industries, large-scale enterprises usually operate side by side with small- and medium-scale concerns, which are fairly flexible as regards the replacing capital by labour or vice versa, depending on which is cheaper, and this, together with the progress made in original and adapted technical know-how, has given Japanese industries a great advantage.

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[43] Ministry of International Trade and Industry (MITI), *Official report on foreign trade 1965*, Tokyo.

[44] An interesting feature is the split observable in the geographical distribution of Japanese exports: the largest proportion of the products of the relatively labour-intensive industries, except steel, goes to developed countries, while articles produced by highly capital-intensive industries are exported mainly to developing countries. In recent years, exports of products of the more capital-intensive industries have been increasing rapidly, but the above-mentioned trend persists (see GATT, *International Trade*, 1968).

Table 14

EXPORTS OF MANUFACTURES ACCORDING TO THE CHARACTERISTICS OF INDUSTRIES IN SELECTED COUNTRIES, 1964

(Percentages)

	Japan	*Federal Republic of Germany*	*France*	*Italy*
I. *Products of the heavy and chemical industries*	*57.4*	*80.5*	*69.4*	*59.7*
(*a*) Highly capital-intensive industries	*27.6*	*56.5*	*44.6*	*43.5*
Heavy equipment and machinery[a]	18.8	44.6	31.8	33.7
Ships	(7.4)	(1.4)	(1.2)	(1.0)
Other products[b]	8.8	11.9	12.8	9.8
(*b*) Fairly labour-intensive industries	*29.9*	*24.1*	*25.4*	*16.2*
Light machinery[c]	12.7	10.2	6.1	6.9
Other products[d]	17.2	13.9	19.3	9.3
(Products in group (*b*) as a percentage of the total for (I))	(52.1)	(29.1)	(36.6)	(27.1)
II. *Products of light industries*[e]	*42.6*	*19.5*	*30.0*	*40.3*
TOTAL	*100.0*	*100.0*	*100.0*	*100.0*

SOURCE: Ministry of International Trade and Industry (MITI), *Official report on foreign trade 1965* (in Japanese), Tokyo.

[a] SITC: 711, 712, 714-2,3, 715, 717-1,2, 718, 719-1,2,3.5.8.9. 722-1, 724-9. 726, 731. 732, 734, 735.

[b] SITC: 231-2, 251-2,5,6,7,8,9, 266-2,3,4, 512, 513-5,6, 521, 534, 551-2 561, 581, 629-1, 641-1-6,9, 661-2, 664, 671, 672, 681, 682-1, 683-1, 684-1, 685-1, 686-1, 687-1.

[c] SITC: 714-1,9, 717-3, 719-4,6, 722-2, 724-1,2, 725, 729-1-7, 733, 812, 861-3-6,8, 864, 891-1.

[d] SITC: 532-3, 533, 541, 551-1, 553, 554, 571, 599-2, 673, 674, 675, 676, 677, 678, 679, 682-2, 683-2, 684-2, 685-2, 686-2, 687-2, 689, 691, 692, 693, 697-1, 698-2-4,6, 719-7, 723-1.

[e] SITC: 261-2, 267, 611, 612, 613, 621, 629-3,4,9, 631, 632, 633, 641-3,8, 662, 663, 665, 666, 667-1, 694, 695, 696, 697-2,9, 698-1,5,8,9, 732-2, 729-9, 831, 841, 842, 851, 861-1,2,7,9, 862, 863, 891-2,4,8,9, 892, 893, 894, 895, 896, 897, 899.

The composition of the export items produced by small- and medium-scale enterprises, as estimated by the Ministry of International Trade and Industry shows that the value of the products exported by these enterprises (employing under 300 workers), expressed as a percentage of their total exports, is highest in the case of metal products (over 80 per cent), followed by precision instruments and equipment and industrial machinery (more than 50 per cent in both cases), their share remaining relatively stable (see table 15). Although the percentages for electronic articles and machinery and transport equipment are somewhat low, indirect exports in the form of components of final products exported by major enterprises stand at relatively high figures (18 and 16 per cent, respectively), which testifies to the vertical integration existing in these industries (see table 16). If direct and indirect exports of electronic articles are added together, the proportion is over 40 per cent. In contrast, the proportion of steel, chemicals and petroleum products exported by small- and medium-scale enterprises is relatively low.

It is also worth noting the trends in exports of products that are typical of the small and medium-sized enterprise, such as toys, footwear, simply-worked wood, miscellaneous goods and other articles which can be produced with considerable labour but without the complex techniques required for the products in group (*b*). It is interesting to see that exports of these items soared when Japan had plenty of labour during the 1950s, but lost momentum during the next decade. Exports of other goods produced by fairly small enterprises—sport goods, musical instruments, cutlery, etc.—maintained their upward trend, however, probably because their production was based on advanced techniques.

Table 15

JAPAN: EXPORT OF ITEMS PRODUCED BY SMALL- AND MEDIUM-SCALE INDUSTRIES IN RELATION TO TOTAL EXPORTS, 1962-1966

(Percentages)

Product	*1962*	*1964*	*1966*
Heavy and chemical industries:			
Chemicals	35.9	29.8	26.8
Petroleum and petroleum products	19.5	24.0	23.8
Iron and steel	26.0	19.6	19.6
Non-ferrous metals	30.1	31.4	34.1
Metal products	87.0	78.9	88.0
Industrial machinery	46.8	49.2	51.5
Electrical equipment and machinery	25.3	24.3	25.5
Transport equipment and machinery	13.3	11.6	12.1
Precision instruments and machinery	57.3	57.8	56.8
SUB-TOTAL	*33.6*	*29.3*	*30.0*
Light industry:			
Food	69.0	78.2	78.7
Textiles	81.4	80.3	79.5
Made-up articles and other textile goods	93.0	94.0	93.8
Wood and wood manufactures	79.3	75.9	77.7
Furniture and similar household articles	92.6	93.5	92.4
Pulp, paper and paper manufactures	43.7	45.7	47.4
Printed matter and books	73.1	73.1	73.9
Rubber manufactures	39.6	26.4	27.8
Leather manufactures	94.0	96.5	96.5
Ceramic articles and porcelain	51.6	50.6	50.2
Other products	88.5	84.8	82.9
SUB-TOTAL	*76.1*	*75.3*	*74.4*
TOTAL MANUFACTURES	*53.8*	*47.2*	*44.4*

SOURCE: Ministry of International Trade and Industry (MITI), study on small- and medium-scale enterprises (in Japanese), 1969.

Note: The percentages are calculated in the last stage of processing of export items, so that they are underestimated in the case of industries producing machinery and over-estimated in the case of textile industries.

Table 16

JAPAN: INDIRECT EXPORTS OF SMALL- AND MEDIUM-SCALE ENTERPRISES, 1963-1966

(Percentages of total value of exports)

	1963	*1964*	*1965*	*1966*
Total, manufacturing industry	7.0	7.5	7.9	7.9
Food	7.0	2.7	2.5	2.6
Textiles	3.1	3.5	3.5	3.7
Made-up articles	—	—	—	—
Wood manufactures	—	—	—	—
Pulp and paper	4.0	3.9	3.9	3.8
Chemicals	5.6	5.7	5.9	6.0
Rubber manufactures	8.3	8.7	8.7	8.3
Leather manufactures	—	—	—	—
Glass, articles of ceramic materials, porcelain, etc.	3.9	3.7	3.8	3.8
Iron and steel	3.2	3.5	3.6	3.4
Non-ferrous metals	8.0	7.8	7.4	7.5
Metal manufactures	2.0	3.2	1.8	1.8
General industry machinery	10.9	10.2	10.1	9.9
Electrical and electronic machinery	17.8	17.9	17.9	17.6
Transport equipment	15.6	15.8	15.9	15.8
Precision instruments	9.7	9.5	9.5	9.6

SOURCE: Ministry of International Trade and Industry (MITI), study on small- and medium-scale enterprises (in Japanese), 1969.

In any case, it is clear that the proportion of the products of light industry and of industries which simply enjoy the advantage of cheap labour without needing advanced techniques has gradually declined. On the other hand, there has been a steady increase in the share of products of the heavy and chemical industries, not only in Japan's total exports but also in exports by small- and medium-scale enterprises, which have traditionally absorbed more manpower and have taken more advantage of its relatively low cost than other industries. According to statistics supplied by MITI, the share of products of the heavy and chemical industries in total exports by these enterprises has risen from 32.6 to 47.2 per cent in the last few years, which shows that, as mentioned above, technical innovations have been gradually introduced in the small- and medium-scale industries.

CHAPTER V

PROMOTION OF EXPORTS

A. THE EXPORT PROMOTION POLICY

1. *General observations*

The Government took its first important step in this area in 1954 when it established the Supreme Conference on Exports, presided over by the Prime Minister assisted by all the other Ministers, the Manager of the Bank of Japan and representatives of every industry. This permanent Conference, with its twelve committees for different industries and 72 working groups on commodities, became a legal entity in 1962, since when it has served as a forum for examining Japan's export strategy and fixing export value targets for the principal industries.

The Ministry of International Trade and Industry is responsible for formulating export promotion policy, taking into account especially the conclusions of the above-mentioned Supreme Conference, and for applying the policy in co-ordination with those general industrial and commercial policies which are export-oriented and implemented by MITI. The annual report on external trade published by MITI analyses particularly problems related to exports, outlines the trade and export promotion policy that should be followed to solve them, and suggests measures which could be adopted by the private sector. MITI organizes, moreover, commercial missions and meetings in foreign countries assisted by JETRO (Japan External Trade Organization), experts of trading companies and manufacturing firms in order to formulate strategies for certain exports.

There has always been a general agreement in Japan about the vital importance of exports for the country's economy, which is taught as early as primary school. As from 1959, Japan's Chamber of Commerce and JETRO conducted export promotion campaigns. In its report on foreign trade published in 1969, MITI points out that entrepreneurs became export-minded very rapidly, and especially around the middle or end of the 1950s, when export targets began to play an increasingly important role in their production programmes. This general agreement about and awareness of the importance of exports for Japan did much to make the efforts to increase them more effective.

A variety of promotional measures were introduced, the most important being fiscal incentives and export financing. Of great importance also were certain specific steps taken by the Japanese Government, such as the establishment of a semi-governmental market research agency (JETRO), strict quality control, and measures to stabilize export prices and to promote exports of goods produced by small and medium-sized enterprises.

From 1953, 50 per cent of net revenue from exports (or, optionally, 3 per cent of the total value of exports for producers in general, 5 per cent for manufacturers of industrial equipment and 1 per cent for trading companies) was exempted from taxation. In 1957, this was increased to 80 per cent, in addition to a 100 per cent tax exemption on revenue from exports exceeding those of the previous year by 50 per cent. Despite its importance as an incentive, this system was dropped in 1964 for reasons connected with GATT, though with scarcely any negative effects—at least in terms of the value of exports.

In 1964 some new measures were adopted: special amortization of fixed industrial capital applied in proportion to the percentage of exported products in total production, and tax exemptions on funds reserved for foreign market research. Furthermore, from the same year, MITI began to select "export contributing companies" each of which exported at least 70,000 dollars worth of products and considerably increased the value of its exports or the percentage of exported products in its total production compared with the preceding year. It was soon decided that the new measures adopted in 1964 should be applied in favour of such selected companies. Some 4,500 companies were selected and commended by MITI in 1968.

Furthermore, to finance exports, the Export-Import Bank of Japan was set up in 1951 to provide long-term loans to cover exports of industrial plants, ships and heavy machinery. An important part of the financing was used for the export of ships (58 per cent average for 1960-1965), although loans for industrial plants have been increasing in recent years. Another important measure was the adoption of the favourable re-discount rate of the Bank of Japan for export bills discounted by commercial banks and a low interest rate on loans for exports—two forms of short-term financing. The former corresponds to the financing for the period after shipment up to the time of payment by the importer, and the latter for the period before shipment (but after the signing of the contract) to finance the production and collection of commodities. The system was introduced by the Bank of Japan (Central Bank) in 1954 and had very important effects, because the interest rate (between 5 and 6.5 per cent) was quite low for Japan. The financing of the Bank of Japan in this field increased rapidly and, in some years reached 50 per cent of all the loans by the Bank to private sector.

Japan's tariff regulations provide for a drawback on export goods manufactured from imported products liable to customs duties. This arrangement has not however had any great importance in increasing the country's exports as it only affects a very limited number of goods.[45]

Moreover, the law on exports which came into force in 1950 introduced an export insurance system against risks which could not be covered by private insurance companies. This system has been gradually improved and now covers eight different types of insurance, all of which are sponsored by the Government. The value covered by these forms of insurance reached some 3,000 million dollars (average for the period 1963-1967), which corresponds to 38 per cent of the total exports of Japan.

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[45] Food-stuffs made from sugar, on which customs duties are relatively high; recording tapes, ammonium sulphate, urea, etc.

Although these measures[46] acted as direct inducement to increase exports and although it is not easy to assess their impact, it can safely be said that their influence on the export trade was not decisive, as is confirmed by the fact that the complete and sudden elimination of income tax exemptions, which had been granted to favour exports, did not cause them to decline. Long-term export financing likewise failed to have as great an effect on Japanese exports as on those of other industrialized countries. Japan, which until recently, frequently suffered from a shortage of foreign currency, was never in a position to finance its exports adequately. Very often, this situation prevented it from bidding for contracts which would have enabled it to export industrial equipment.

The ever-increasing competitiveness of Japanese products as a result of the factors cited earlier was the main reason for the rise in exports, which could never have been achieved merely through direct promotional measures. Such measures as these played only a complementary role in improving, for example, the country's capacity to compete. As a report published by MITI points out, measures directly connected with promoting exports are not enough; they must be backed up by a whole complex of economic policy measures primarily designed to increase exports.

2. *Quality control*

Before the war it was sometimes said that, though cheap, Japanese products were inferior in quality to those of countries whose prices were higher. After the war, however, Japan made enormous efforts to control and improve the quality of its products. Besides, the fact that Japanese products were cheaper would not greatly have swelled exports since even if the quality of the vast majority of goods sold abroad had been acceptable, the fact that others were slightly inferior in quality would have damaged the prestige of Japanese products as a whole.

The quality control system of export products became law at the beginning of the century and placed the responsibility for inspection and supervision in the hands of private institutions. This tradition was restored after the war with the passing of a new quality control law on export products in 1948, extensively revised in 1957 to make it more effective. When it first came into force, some 50 per cent of exported products were subject to inspection. Currently, 30 per cent of Japan's total exports are covered by the system, and of these, 50 per cent are machinery and metal products, and 12 per cent are chemicals. Six government institutions (mostly official laboratories) and thirty-nine officially designated private export-inspection agencies are responsible for enforcing the law through 2,600 authorized inspectors.[47] Apart from the inspections carried out by these officials, the Government periodically conducts direct inspections of export products in the warehouses themselves or in the authorized export-inspection institutions. In 1965, for example, 31,000 of these inspections were carried out. This system was very successful and brought the number of refusals of export permits as a result of direct inspection down from 3.4 to 0.8 per cent between 1958 and 1965.

The improvement in the quality of exported products was closely allied to the campaign introducing the system of quality controls during the process of manufacture which has already been mentioned.

According to an official publication on the state of Japan's industrial technology published in 1955,[48] one of the main reasons for launching the campaign in favour of quality control in factories and of production controls during processing was to promote exports. Most of the standards applied during the early years were for products which could not be exported without being subjected to inspection.

Furthermore, as has already been pointed out, a highly important point is the periodical revision of these standards[49] so as to introduce increasingly severe requirements as to length of life, precision, resistance to temperature, weight, etc., as Japanese industries become more and more efficient. The net result is that, as far as many products are concerned, Japan's standards actually exceed international requirements. For example, a greater degree of precision is required of certain machine tools, optical instruments, sewing-machines and components, condensers, ball-bearings, etc., and this has contributed to Japan's exports of these products.[50]

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[46] We could cite also the system of preferential foreign exchange distribution in favour of manufacturers and exporters of certain products to enable them to import the necessary materials for their production or other goods for sale on the local market. Nevertheless, this temporary system, which was applied in certain years prior to 1960, was not considered very satisfactory as an export promotion instrument and was abolished in 1960. (See for example, H. Kanamoril, *Exports of Manufactures and Industrial Development in Japan* (E/CONF.46/P/12), UNCTAD, 1964.)

[47] As regards the inspection methods for the products subjected to inspecting institutions, see, for example, The Japan Chamber of Commerce and Industry, Standard Trade Index of Japan. This publication contains also information on the systems referred to below, such as design control, and lists of exporters' associations and other practical information on export operations in Japan.

[48] MITI, *Gijyutsu Hakusho* (Report on the current state of technologies), 1955.

Brief reference should here be made to design control, in view of the pre-war accusations that certain Japanese products copied foreign designs. The exports inspection law that came into force in 1949 required producers to obtain official certificates stating that they were employing no foreign designs. In 1952, the import-export law was passed, strictly prohibiting the export of products that violated the industrial property rights of other countries and establishing a new design control system likewise requiring a certificate to the effect that the relevant product did not involve the use of any foreign designs. Inspection is carried out by four design centres specializing in textiles, china, machinery and miscellaneous products. Together with MITI, these centres have made serious efforts to improve design, for instance by awarding the letter "G" (for "Good") to products of superior design.

Even when they had no direct short-term effects, improvements in quality and design control were tremendously important. Although, as stated above, Japan's capacity to compete was achieved by reducing the price of its exports, this would not have been successful without the simultaneous control and improvement of quality. In point of fact, Japan was able to increase its capacity to compete by means of a combination of both factors.

3. *Stabilization of export prices and exporters' associations*

It was considered highly important to stabilize the export prices of certain products, especially those manufactured by small- and medium-sized enterprises whose negotiating power *vis-à-vis* the major foreign importers was slight. Price instability, especially sharp drops caused by excessive domestic competition or some other factor, could have damaging effects, such as laying Japan open to accusations of dumping by the importing country or preventing Japanese producers from maintaining or improving the quality of their exports, thus giving rise to a vicious circle of low prices and poor quality and consequent loss of prestige.

Since light machinery was originally the main export item and was largely manufactured by small and middle-sized enterprises, there was a pressing need to introduce some kind of price stabilizing mechanism. Faced with the major problems involved in exporting sewing-machines and field-glasses, MITI adopted it from dropping too low. The light machinery a system of export price verification to keep export promotion law gave the system legal force. Nevertheless this system was not very effective, because of the difficulty of ascertaining the real export price.

With this in view and in order to improve quality and generally achieve a steady increase of exports through fair competition, the 1952 import-export law authorized the setting up of associations of exporters, 103 of which were established with Government encouragement. Through these associations, exporters and producers agreed to fix price levels and export requirements that were binding on their members. According to the original law, the prior permission of MITI was necessary for such agreements, to be put into effect, but this clause was eliminated in 1955, when the law was extensively revised. The amended law included new clauses restricting the activities of outsiders and authorizing agreements among manufacturers and between exporters and manufacturers. Most of the voluntary restrictions relating to products for specific markets (referred to in chapter IV) are also formulated by these associations (see table 17).

Producers further sought to export their goods under their own trade marks rather than under those of the importer or distributor, and this proved to be one of the best ways of stabilizing both the export price and the volume of exports and of promoting additional sales.

4. *Promotion of exports of the products of small and medium-sized enterprises*

As was pointed out in chapter IV, the small and medium-sized enterprises specialized in

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[49] Japanese standards are known by the sign of JIS (Japan Industrial Standards); for more details on JIS, see, for example, appendix I of OAS, *Políticas e Instituciones de Promoción de Exportaciones de Productos Manufacturados, Etudios de Casos: Japón*, 1964, Washington, D.C.

[50] MITI, *Gijyutsu Kakushinka no Kogyogijyutsuin* (The Institute of Industrial Technology and technological progress), 1964.

Table 17

JAPAN: EXPORT AGREEMENTS AT THE END OF THE 1968 FISCAL YEAR

	Subject and number of agreements[a]									*Product*				
	Price	*Quantity*	*Quality*	*Design*	*Form of payment*	*Bidding*	*Importers*	*Others*	*Total*	*Agricultural commodities*	*Textiles*	*Products of the heavy and chemical industries*	*Others*	*Total*
Agreements reached through export associations	32	49	15	16	21	1	28	42	204	16	31	31	22	100
Agreements between exporters	8	19	9	0	19	5	0	17	77	0	88	12	0	100
SUB-TOTAL	*40*	*68*	*24*	*16*	*40*	*6*	*28*	*59*	*281*	*14*	*40*	*27*	*19*	*100*
Agreements between producers, etc.	37	29	6	2	0	1	23	42	140	8	27	59	6	100
TOTAL	*77*	*97*	*30*	*18*	*40*	*7*	*51*	*101*	*421*	*12*	*36*	*37*	*15*	*100*

SOURCE: MITI, *Official reports on foreign trade 1969*, Tokyo.

[a] Agreements authorized under the law on imports and exports.

articles in the production of which Japan enjoyed certain relative advantages, but they lacked resources to promote sales of their products abroad. Given the small scale of such enterprises, they had no direct access to foreign markets, no information on markets or knowledge of the laws and trade regulations in force in the importing countries, or of ways of financing exports; for this reason, the Government decided to make a great effort to improve the situation.

Apart from above mentioned quality control and export price stabilization, financial assistance was provided for the modernization of small and medium-sized enterprises,[51] and in 1962 a special long-term credit system was introduced; all these export promotion measures were adopted in conjunction and led to successes such as that achieved in the sewing-machine industry.

Various supplementary official measures were also applied to improve the quality, design and marketing of the export products of such enterprises; JETRO provided assistance through twenty-two consulting centres by carrying out market research and acquiring some of the best articles produced by such firms for display abroad. There is an annual exhibition of such articles. Articles produced by State institutions which are considered suitable for export production are also exhibited.

In addition to government measures, the trading companies have done a great deal to promote the exports of small and medium-sized firms.

5. *Market research and other activities (function of JETRO)*

The body with the most important responsibilities in the field of export promotion is the Japan External Trade Organization.[52] This is a semi-public institution under the auspices of the Ministry of International Trade and Industry with an annual budget of more than 20 million dollars and with 70 offices in the main trade centres in the world; fifteen of these offices are Japanese Trade Centres which, apart from carrying out the normal activities of JETRO, hold a permanent exhibition of Japanese products on their premises. JETRO has a staff of about 1,500, 40 per cent of whom work abroad.

The main functions of JETRO are foreign market research, advertising, holding exhibitions, introducing Japanese firms and products to foreign customers, and fighting restrictive measures and campaigns against Japanese products in other countries.

The most important activity is market research. The data assembled by JETRO are stored in electronic computers[53] used by the JETRO Information Centre, and information is distributed to trading companies and industries in a daily bulletin of about thirty pages. Apart from normal research activities, more detailed research is carried out into specific export products. Each year, about 250 articles are selected for this type of research on the basis of suggestions put forward by the various industrial associations and by MITI.

The basic criteria used by JETRO in the selection of products for this type of more detailed market research are as follows:

1. They should be important Japanese export products and there should be reason to believe that it is possible to increase export of other complementary or related products;

2. They should be new articles produced along modern technological lines, with the expectation that they will become competitive in a short time;

3. They should be products meeting with stiff competition from other countries, particularly the developing countries, and a study should be made of the demand for similar products of superior quality;

4. They should be articles produced on a large scale which need new foreign markets, particularly when sales have reached a peak in existing markets;

5. They should be products in which there is little export activity because of a lack of proper organization of manufacture and sales; and improvement may therefore be hoped for through an analysis of the systems of production, technology and marketing methods used by the chief competitors in foreign markets;

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[51] See for example, Asian Productivity Organization, *Productivity in Small Industries, Some Lessons from Japan*, 1969.

[52] There are specialized organizations for exports of certain products such as the Plant Association and the Machine Tool Association. The former was established in 1955 to stimulate the exports of complete industrial plants through the sending of technical consultants to collaborate in pre-investment surveys and the mechanization of factories. Up to 1968, 330 technical missions had been sent by the Association.

[53] This is the JETAC system, specially developed for the purpose in the Industrial Technology Institute. In addition, foreign economic data are processed by the World Economic Information Service, a Japanese undertaking specializing in that field, which cooperates closely with JETRO.

6. They should be goods showing wide fluctuations in exports for various reasons.

Research is not limited to a simple market study: an attempt is made to determine what measures should be taken to promote exports effectively. There is a systematic follow-up of the study of the products selected for such detailed research in subsequent years.

There is close co-operation between JETRO and the private sector, and the large commercial firms provide JETRO with information based on their long experience. Some of the directors of JETRO previously worked in large commercial undertakings. Experts on a variety of products, most of them lent by the export associations of the different industries, participate in JETRO's activities in foreign countries. JETRO organizes and co-ordinates exhibitions under the auspices of foreign or Japanese authorities; among displays of the second type is a floating exhibition on board a ship which docks at all the most important ports.

B. The role of the large trading companies

There is no exact parallel in other countries for the large Japanese undertakings specializing exclusively in trade (called *shosha*), since they carry on both foreign and domestic trade in all kinds of articles and maintain commercial relations with all the countries of the world. Each of the nine largest enterprises has a turnover of more than 1,000 million dollars, and there are numerous small and medium-sized companies. In 1967, the four largest companies accounted for 37 per cent of Japan's foreign trade, and 29 companies were responsible for 70 per cent of export and 80 per cent of imports.

In fact, little is known outside the country of the important role played by the large trading companies in Japan. They started as intermediaries for the sale of textile products which, up to a short time ago, constituted an important share of their business. However, when Japanese exports were re-oriented towards the products of the heavy and chemical industries, these undertakings were overhauled and modernized to meet the new situation. Each of the large companies has more than 10,000 employees, the majority being university graduates, and each has more than fifty offices throughout the world.

These firms have enormous advantages in the field of foreign trade:

First, the huge scale of their operations reduces the cost of market research, correspondence, representation, etc. One advantage is the accumulation of experience in selling thousands of different products in widely different countries (tastes of foreign consumers, trade regulations, etc.), apart from the advantage of having important contacts in other countries and having representatives based on the different world trade centres, able to supply information at a moment's notice. Because of these advantages, these companies have a more efficient foreign trade: they can select markets for specific products and are able, for example, to export surpluses resulting from an economic depression fairly speedily.

On the other hand, because of the reduction of costs owing to the large scale of operation, they are able to keep their net profits at a low level and their export prices low. According to data supplied by MITI, the net profits of these companies have represented only 0.6 per cent, or even less, of the total value of sales in recent years. Even if marketing costs of imports and exports are added to these profits, the resulting figure is only between 3 and 5 per cent.[54] As these firms encounter greater competition in the field of exports than in that of imports, over-all export profits are estimated to represent between 1 and 2 per cent of the price of exports. For this reason, exports through the large trading companies hardly increase the export price. If account is taken of the enormous costs involved when the producing firms try to export their goods directly, the percentage profit is very small. Even large industrial concerns, which export their products directly, are accustomed to sell through the large trading companies when a small quantity is involved, or when they wish to export to countries where they do not have their own representatives.

Another, and perhaps the most important, of the functions of the trading companies is the export of goods produced by small and medium-sized enterprises; this was particularly true in the last decade, when Japan had an advantage in such products because of its abundant labour supply.

The large trading companies, with their vast experience, wealth of capital and store of reliable information on the external market, played an important role as exporters of the products of small and medium-sized enterprises, and in some cases, supplied them with advice on questions of quality and contributed to their finances. Even though this function of the trading companies has been losing importance, it was very important when Japan began to increase its exports, and this experience could serve as a useful example to those developing countries which wish to set up similar bodies.

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[54] MITI, *Sengo Nihon no Boeki Nijyunenshi* (Twenty years of post-war Japanese foreign trade), 1967.

They also play an important part in national trade, since 50 to 60 per cent of their total sales are on the domestic market, and they are thus able to organize the two types of trade in conjunction, where appropriate. An interesting example of this combination of transactions is the purchase of petroleum in the Middle East in exchange for boats. Similarly, the trading companies sell automobiles and buy bananas in Ecuador.

The large trading companies also act as brokers for Japanese investment in foreign countries. Industrial concerns prefer to invest abroad through the trading companies because of their experience in the countries concerned.

There are two types of Japanese investment abroad. One is investment in the exploitation of natural resources. The large trading companies currently participate in most projects of this type. Another type of investment abroad is the establishment of manufacturing industries, usually in the form of mixed enterprises, the country in which the investment is made having a share in the capital. In many cases the trading companies act in conjunction with Japanese industry to set up mixed enterprises; they are in a better position to evaluate the feasibility of such projects in the light of their experience in sales techniques in the countries where they operate and their knowledge of the laws and customs of those countries.

It should be noted that both types of investment abroad help to increase exports of industrial equipment, other capital goods and intermediate products.

Lastly, the large trading companies also help to increase exports through three-way transactions.

There is considerable scope for the development of three-way trade, even though at present it accounts for only 3 per cent of the total transactions of the large trading companies: this type of trade would help to solve the balance-of-payments problems faced by various developing and socialist countries, and at the same time would indirectly contribute to expanding Japanese exports. The large Japanese trading companies have developed a project designed to offset the favourable trade balance of the socialist countries with respect to Japan against the favourable trade balance of the Latin American countries with respect to the socialist countries. Latin America imports very little from the socialist countries and could use its surplus to import Japanese articles.

Apart from possessing their own capital, some trading companies are financed by large commercial banks belonging to the respective *keiretsu*. Although they tend to have closer relations with, and to market the products of industries of the same *keiretsu*, they are under no obligation to do so, and they often trade in articles produced by other firms.

The trading companies are private, with no government participation, the Japanese Government's policy in this respect being as follows:

(1) Equal treatment so as to stimulate competition;

(2) Help and guidance to the small and medium-sized trading companies, authorizing them to set up unions with functions similar to those of the large companies. (So far, eight unions of this type have been formed);

(3) Authorization, from 1956, of foreign currency accounts, which are not subject to strict Central Bank control. Since the Japanese Government maintained the system of Central Bank control for a long time in the post-war period, the above authorization represented a considerable concession;

(4) Training of the staff of the trading companies: crash courses are offered in different parts of Japan. The Government has established a training centre for such staff, who usually have university degrees and some basic knowledge of foreign trade. The chief activities of the centre will be the study of the economies of other countries, sales techniques, foreign trade, foreign investment and languages.

APPLICABILITY OF JAPAN'S EXPERIENCE TO LATIN AMERICA

A. GENERAL OBSERVATIONS

In the light of the foregoing analysis, the mainspring of Japan's export boom over the past fifteen years may be summed up as follows:

(1) The key factor was a highly dynamic economic development process which enabled productivity to rise steadily as a result of large-scale investment and technological progress. This process helped to increase competitive capacity as a result of a reduction in export prices and a change in the composition of exports, the policy being to stimulate those for which there was likely to be most demand on the world market.

(2) Government policy aimed at promoting and channelling investment and technological progress by various means. Industrial policy and trade policy were formulated on an integrated basis and were geared to the expansion of exports. The principal measures were designed to create and maintain a climate of strong competition among private enterprises, provide financial resources for industrial investment, particularly in certain sectors, and encourage both saving and investment by enterprises through the provision of fiscal incentives, and especially by allowing short-term amortization. The same objectives were sought through trade policy by improving investment terms, obtaining imported industrial machinery and equipment, and providing facilities for the use of foreign techniques.

(3) Direct export promotion measures were very effective and complemented the basic conditions established by the Government. Quality control, under the inspection system, supplemented the general technological progress achieved in factories. The supplementary nature of this action was evident in the measures relating to small- and medium-scale enterprises and the stabilization of export prices. Direct measures covered nearly every facet and formed a complete set of export promotion instruments ranging from the Supreme Conference and the provision of fiscal incentives to the establishment of a semi-public export promotion agency.

(4) The activities of the large trading companies also played an important part in the expansion of Japan's trade.

All the above-mentioned factors are reflected in the legislation and regulations set out in in table B of the annex, which also indicates the agencies responsible for implementing the various provisions. The section of this table that deals with direct measures was prepared in line with the system used by the ALALC secretariat for the main Latin American countries, to facilitate comparison between the measures adopted by Japan and the provisions in force in Latin America.[55]

Each of the above-mentioned factors must be examined in order to determine whether Japan's experience is applicable in the efforts to expand Latin America's exports. The first, which is of fundamental importance, is bound up with Japan's economic structure; therefore, the possibility of applying Japan's experience in this respect cannot be evaluated without a study in depth of the economic structure of Latin America, which is obviously outside the scope of the present report. In view of the close relationship between the structure of the economy and the policies that should be adopted in order to increase exports, however, it is necessary to examine certain elements that would help to determine how far Japan's experience could be applied to Latin America, and whether some of the direct measures to promote Japan's exports could be adopted in the region.

Japan stands out among what are considered today as the industrialized countries that are exporters of manufactured goods, not only because it achieved a faster economic growth and a more rapid increase in exports than other countries in this category, but also because it reached its present stage of industrial development more recently, and in doing so solved some of the very same basic problems which the developing countries will have to overcome. Originally, of course, there was considerable unemployment in Japan, and even now labour is relatively plentiful, at any rate in comparison with the situation in other developed countries, and it should not be forgotten that the traditional low-productivity sectors still exist there on a larger scale than in the other developed countries.

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[55] Table summarizing the legislation on export promotion machinery in force in the ALALC countries, updated at the fourth meeting of the Advisory Commission on Trade Policy (9-17 September 1968), ALALC/CAPC/IV/Informe, annex VI, pp. 51-66.

The important point is that, in spite of all these basic problems, Japan's economy has developed at an accelerated pace owing to the "virtuous circle" referred to earlier; it has overcome difficulties similar to those existing in developing countries, besides grappling with other adverse factors peculiar to Japan, such as the lack of natural and energy resources, the devastation caused by the Second World War, the shortage of arable land, the loss of its traditional markets, etc.

Two important factors related to Japan's rapid economic growth and the expansion of its exports were its relatively plentiful manpower supply and the technological gap separating it from the other industrialized countries.

These two factors, other things being equal, make for a greater difference between the increase in labour productivity and the increase in wages and salaries, since abundant manpower tends to slow down wage increases in relation to the growth of labour productivity. Moreover, the existence of a technological gap leaves plenty of room for stepping up productivity through the introduction of technical processes developed abroad, provided the importing country has the capacity to absorb them. This, in fact, is what happened in Japan, and it is borne out by the concern expressed in certain circles lest the gradual decrease in the supply of manpower and the narrowing of the technological gap during the last few years should cause a loss of momentum in Japan's economic development and in the expansion of its exports.[56]

In the light of the above considerations, it would seem that Japan's experience is especially applicable to countries which have fairly abundant manpower and are far behind the developed countries in technical know-how. Thus a policy should be adopted to promote and channel industrial investment and absorb modern techniques in accordance with the following scheme:

(*a*) An analysis must be made to ascertain which factors are common to Latin America and Japan and which are not, and to what extent the common factors contribute to or impede economic development or export expansion in the two economies, with a view to launching a dynamic process such as that which took place in Japan;

(*b*) The industries in which heavy investment is required must be selected, according to the particular conditions prevailing in each country;

(*c*) The techniques introduced, improved or adapted in Japan which are most likely to be applicable in Latin America must be studied, with particular reference to the availability of the factors of production and the existence of small and medium-sized enterprises and compared with the techniques used in other industrialized countries in order to determine whether or not such investment is likely to yield good results;

(*d*) An analysis must be made of the possibility of adapting to Latin America the policies and instruments used by the Japanese Government to stimulate the private sector—which, directly or indirectly, have resulted in a cumulative investment process, enhanced productivity, and export expansion—such as over-all industrial policy, and trade, financing, export promotion and other policies.

B. SELECTION OF INDUSTRIES AND TECHNIQUES

As regards the first point, if the funds available for investment and the supply of foreign exchange are insufficient, it would be advisable to adopt a policy along the lines of that followed by Japan during the period when financing was short. Once the process has gained momentum, effective measures should be taken to encourage savings by individuals and by enterprises and appropriate machinery should be set up to channel a larger proportion of capital into new investment in order to achieve a further increase in productivity. It would be advisable, for that purpose, to stimulate private enterprise by means of competition at the national or the regional level, within the context of integration, but government initiative must be given its proper place also.

Japan's experience would be useful in selecting the industries in which heavier investment should be made, since Japan was most successful in its own choice under virtually the same conditions as those prevailing in Latin America. Industries with the following characteristics might be considered eligible:

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[56] See, for example, GATT, *International Trade, 1968* (Geneva, 1969), pp. 19-60, although there are also several very different analyses and projections, e.g., Japan Economic Research Centre, medium-term projections concerning the Japanese economy (in Japanese), 1969.

(i) Considerable manpower and little capital;

(ii) Maximum value added through the use of modern technical know-how;

(iii) Dynamic domestic and world demand prospects;

(iv) A short training period.

In making this choice, it would advisable to study the techniques used in Japan and their adaptation to the supply of the different factors of production. Because of the similarity between Latin America and Japan, it might be best to combine some of the techniques adopted and developed by Japan with appropriate techniques from other industrialized countries.

Processes or techniques are understood here to mean not only those that have been patented, on which royalties must be paid, but also the whole complex or combination of techniques used in Japanese industry, which have been adapted to local requirements, and an extensive range of know-how and methods which have helped to raise productivity, particularly in the areas of research, purchase of machinery, production management, quality control, relations between enterprises, techniques for marketing new products, etc.

When international agencies put forward suggestions or provide technical assistance to Latin America, especially in the choice and introduction of advanced techniques, it might be useful to make a detailed study of the possibility of applying Japan's experience. The study could be carried out by a group of Japanese and Latin American experts, with the present study serving as the point of departure or general frame of reference.

The Japanese Government has been making serious efforts to transfer its technical know-how to the developing countries through a systematic and continuing programme. So far, more than twenty-five Japanese technology centres have been established in various developing countries, with the purpose of introducing and disseminating Japanese methods and adapting them to local requirements. The Japanese Technology Centre for Small-Scale Industry, operating in India, has done excellent work in designing prototypes of machines based on Japanese models. Similar work has been done by centres in other countries, which include the Japanese technology centre for telecommunications in Thailand and Mexico, the centres for small-scale industry in Iran, Kenya, Afghanistan, the Philippines and Singapore and the technology centres for the textile industry in Brazil and Ghana. Japan also provides various types of technical assistance, mainly through its Overseas Technical Co-operation Office.

It has been recommended that these activities be intensified, and that advantage be taken of Japan's valuable fund of technological experience, according to the particular conditions in the countries that are in a position to absorb it. Japan's successful technical assistance activities in the Asian countries would facilitate the preparation of a more comprehensive programme for any Latin American countries that may desire one.

Japan's experience in the acquisition of foreign techniques could also be most useful, above all in relation to the terms of the contracts for the use of patents and know-how; enabling Governments to formulate a control policy in this area and at the same time obviating some of the problems encountered by Japan. This is a very important point, not only because it is imperative to control the introduction of advanced technical processes in order to choose the most suitable techniques and methods, and the industries that are to be promoted, but also because in Latin America this control is essentially a formality carried out more with the short-term balance-of-payments position in mind than industrial policy requirements or the need to boost exports.

Both the basic industries and their infrastructure should be taken into account in the choice of industries. In the initial period in Japan, priority was given to such sectors as steel, energy and shipping, whose rationalization solved the problem of the high costs of the major inputs. Similar action should be taken in Latin America, to pave the way for the development of other industries and place them on a competitive footing, for which purpose different policies should be adopted for the basic industries and for export activities. In both types of industries, large-scale production as a result of regional integration would help to reduce production costs. Until such time as the basic industries could bring their costs down to a level comparable with those in industrialized countries, the granting of subsidies to cover the difference in the costs of inputs, as was done in Japan,[57] would enable other industries to export their products.

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[57] These subsidies were granted directly to industries producing basic inputs so that they could supply their products and services at prices comparable to world market prices, during the period when Japan

Another important step would be for the Latin American countries to modernize their many small and medium-sized enterprises and to promote exports of their products. Japan's experience has shown that technological innovations can be effectively introduced in these enterprises, which despite their disadvantages, have become increasingly efficient with only a moderate volume of investment, as the result of a better organization of production, better administrative methods, and quality control systems and better utilization of manpower in general. These enterprises, in addition to operation side by side with and complementing the large-scale enterprises, have been extremely successful in exporting their own products.

Therefore, a useful lesson could be learned from events in Japan, in particular the Government's policies to step up the production and exports of these enterprises and to provide financial and technical assistance in rationalizing their production, the methods used to establish official production standards on an extensive scale, the measures to amalgamate these enterprises, and the creation of industrial zones, all of which enabled them to specialize increasingly in a limited number of articles through vertical and horizontal integration, thereby achieving higher productivity and facilitating the introduction of more specialized machinery and more advanced techniques.

C. FORMULATION OF POLICIES AND PRACTICAL MEASURES

Lastly, with regard to government policy, three important features characteristic of the Japanese experience should be mentioned. First, the establishment of an over-all policy in the light of clearly identified objectives and the continuity of such policy through efficient planning and the adoption of long-term legislation. Secondly, compatibility of practical policies and the instruments used for their implementation, such as industrial, financing and trade policies and the policies governing export promotion, the introduction of foreign technology and the admission of foreign capital. Thirdly, co-ordinated action between the private and the public sector.

The basic official attitude to the organization of the Japanese economy has undergone no important change in the two post-war decades, except in the period when the country was governed by foreign armed forces. As regards the vital importance of export expansion, there has been a supra-political consensus, which the adoption of a variety of measures has contributed to reinforce. It could be said that this consensus exists not only between entrepreneurs and civil servants, but also among the great mass of the people. It is a basic and indispensable pre-condition at all levels of national life, if the broad lines of official policy are to be upheld, regardless of changes in government. If there is a political will to carry forward dynamic industrial development and if there exists a national consensus on the importance of achieving such development, the continuity of long-term policy will be assured, as happened in Japan: the creation of an atmosphere of security greatly facilitates the efforts of private enterprise.

As was pointed out in previous chapters, the industrial and trade policy of Japan was slanted very differently from that of Latin America. Latin America would have to remodel its industrial and trade policy to give more importance to exports of industrial products, since import substitution is currently not effective enough as a stimulus to industrial development or as a strategy to solve the balance-of-payments problems.

The broad lines of post-war Japanese policy could to some extent serve as an example to Latin American policy-makers for the creation of an industrial capacity employing a certain amount of advanced technology and producing articles for which there is world demand.

It should be remembered that the effective expansion of exports depends not only on world market demand, but also on the conditions of supply, particularly in the long term, as they affect each individual exporting country. In this respect, the adoption of measures aimed at creating conditions of supply favourable to exports taking account of demand prospects, is the most important aspect of export promotion.

Of course, industrial policy should be formulated and implemented in conjunction with trade policy, the introduction of advanced technology and methods of financing and direct measures aimed at promoting exports. This compatibility and consequent co-ordination of policies was achieved in Japan primarily because, at the administrative level, all activities relating to expansion of exports were carried

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was not yet a member either of GATT or of the International Monetary Fund. At the present time, under the terms of the General Agreement on Tariffs and Trade, the Contracting Parties may not grant export subsidies, even though it has been stressed on several occasions that subsidies should be permitted if they are to compensate for the high cost of inputs in developing countries.

out by an integrated government agency: the Ministry of International Trade and Industry (MITI), which also exerts a strong influence on such bodies as the commission on foreign capital, which determines policy on investment and the introduction of foreign technological know-how, and also considerable influence on the Development Bank of Japan. In addition, most of the semi-public institutions dealing with exports, including JETRO, are under the auspices of this Ministry. Through the Supreme Conference on Exports, presided over by the Prime Minister, the maximum degree of co-ordination is achieved, and this is supplemented by co-ordination between the public and private sectors in the field of industry and foreign trade.

Once the basic conditions for export promotion had been met, more direct measures were adopted with a view to finding new markets and opening up marketing channels for new manufactured products. Above all, the Japanese experience in quality control and price stabilization could serve as a basis for formulating a suitable Latin American policy, since the expansion of Latin American exports to the developed countries would meet with problems that were resolved some time ago in Japan. The special measures aimed at promoting the exports of small and medium-sized enterprises are also of great importance.

It should be borne in mind that direct measures are always of a complementary nature, and for this reason would not contribute much to export promotion if the basic conditions were not fulfilled.

As regards quality control, it should be remembered that once foreign consumers had gained an unfavourable impression of Latin American goods, it would be very difficult to make them change their minds, as was the case with Japanese products before the last war. This is an important point, since Latin American producers have not paid sufficient attention to the quality of their goods in the process of import substitution, the domestic market being well protected by high tariff and non-tariff barriers.

Another aspect of export promotion is price stabilization: it is important to achieve a proper balance in this respect, so as not to provoke complaints from the importing countries and to ensure remunerative prices for the exporting firms. Some of the measures adopted in Japan, such as the setting up of associations of exporters could easily be applied in Latin America.

The promotion of Latin American exports would also be facilitated by the creation of agencies specializing in foreign trade, along the lines of the large Japanese trading companies, especially in view of the scant experience of Latin American firms in this field.

It might also be feasible to set up institutions to carry out some of the functions of the trading companies and of JETRO, and no great risk would be run if in the first instance their activities were restricted to exporting a limited number of manufactured goods to the larger trading centres of the world. Japanese experts could be employed to help the best formulae for setting up this type of institution, since the large trading companies are peculiar to Japan and JETRO is one of the most efficient organizations in the world in the sphere of market research. The international agencies specializing in export promotion should pay due regard to the Japanese experience, and it would be appropriate to ask Japan to accord greater priority to Latin America within its programme of technical assistance in this sphere. The new institutions might co-operate with Japanese institutions that have experience of the different commercial centres of Latin America.

Lastly, the interrelation between the different measures should not be forgotten, since the effect of any measure introduced in isolation would be diminished. If it were not possible to introduce a whole range of measures, it would be necessary to make special adjustments to the isolated measure or to create suitable conditions to ensure its effectiveness. In some cases it would be advisable to take advantage of the favourable conditions created by the process of regional integration.

This analysis is by no means exhaustive; other practical ways of applying measures would have to be considered, taking account of the special conditions prevailing in each of the Latin American countries. However, we hope that this preliminary attempt to apply the Japanese experience in export expansion to Latin America will stimulate ideas and constructive debate which will serve the interests of the region.

Annex follows

Annex

Table A

JAPAN: EXPORT CHARACTERISTICS

SITC		*Exports (million of dollars, f.o.b.)*			*Annual cumulative growth rate*		
		Averages			*1961-63*	*1966-68*	*1966-68*
		1956-58	*1961-63*	*1966-68*	*1956-58*	*1961-63*	*1956-58*
0-9	*Total exports*	*2 745.1*	*4 868.0*	*11 063.2*	*12.1*	*17.9*	*15.0*
0-1	*Food-stuffs*	*190.5*	*293.1*	*396.0*	*9.0*	*6.2*	*7.6*
26, 65, 84	*Textiles*	*949.8*	*1 216.4*	*1 814.4*	*5.1*	*8.3*	*6.7*
261.3	Raw silk	35.4	49.8	7.1	7.1	—32.7	—14.8
266.2	Synthetic fibres	0.1	8.6	72.8	143.7	53.3	93.3
651.3-4	Cotton yarn	24.7	26.8	15.7	1.6	—10.1	—4.4
651.6	Yarn of synthetic fibres	4.1	29.0	141.7	47.9	37.3	42.5
652	Cotton fabrics, woven	283.0	332.3	257.4	3.3	—5.0	—0.9
653.1	Silk fabrics, woven	31.8	42.0	27.4	5.7	—8.2	—1.5
653.2	Woollen fabrics, woven	36.2	48.0	88.7	5.8	13.1	9.4
653.5	Fabrics, woven, of synthetic fibres	4.5	70.9	326.2	73.6	35.3	53.5
653.6	Fabrics, woven, of artificial fibres	209.0	160.1	136.0	—5.2	—3.2	—4.2
84	Made-up articles, clothing	137.7	201.4	354.4	7.9	12.0	9.9
5	*Chemicals*	*132.6*	*259.4*	*719.6*	*14.4*	*22.6*	*18.4*
ex 512.7(2)	Sodium glutamate	9.1	14.3	15.0	9.5	1.0	5.1
513.5(5)	Titanium oxides	6.0	7.8	12.0	5.4	9.0	7.2
541	Medicinal and pharmaceutical products	12.3	23.6	37.0	13.9	9.4	11.6
ex 512.7(4) ex 561.1	Urea	12.4	31.7	96.4	20.7	24.9	22.8
ex 561.1	Ammonium sulphate	36.2	36.7	52.3	0.3	7.3	3.8
581	Plastic materials	10.1	46.0	183.4	35.4	31.8	33.6
66	*Non-metallic mineral manufactures*	*120.0*	*190.0*	*303.6*	*9.6*	*9.8*	*9.7*
661.2	Cement	34.5	26.5	26.9	—5.2	0.3	—2.5
662.4(4)-(5)	Tiles	5.5	24.0	46.3	34.6	14.0	23.7

68	Non-ferrous metals	41.7	35.0	128.9	—3.4	29.8	11.9
69	Manufactures of metal	76.0	176.2	414.0	18.3	18.6	18.5
7,861,864,891.1	*Machinery and transport equipment*	*634.9*	*1 444.9*	*4 602.6*	*17.9*	*26.1*	*21.9*
711.5	Internal combustion engines	6.4	19.7	61.8	25.2	25.7	25.5
715	Metalworking machinery	3.9	17.9	73.7	35.6	32.7	34.2
717.1	Textile machinery	34.3	61.8	108.3	12.5	11.9	12.2
717.3	Sewing-machines	44.9	59.0	101.3	5.6	11.4	8.5
718.4 719.3	Construction and mining machinery	9.2	26.5	75.1	23.6	23.2	23.4
719.7	Ball, roller or needle-roller bearings	4.5	21.6	61.7	36.9	23.4	29.9
722.1	Electric power machinery	7.9	30.9	86.8	31.4	23.0	27.0
724.1	Television broadcast receivers	0.4	21.4	192.5	121.6	55.2	85.5
724.2	Radio broadcast receivers	16.7	175.4	344.4	60.1	14.4	35.4
891.1	Tape recorders	0.4	35.1	195.9	144.7	41.0	85.8
731	Railway vehicles	28.7	49.2	59.1	11.4	3.7	7.5
732.1-8	Motor vehicles	23.1	134.0	541.1	42.1	32.2	37.0
732.9	Motor cycles	1.0	34.2	176.0	102.7	38.8	67.7
735	Ships and boats	313.9	286.0	963.2	—1.8	27.4	11.9
861.3(1)	Binoculars and refracting telescopes	12.6	15.9	32.4	4.8	15.3	9.9
861.4	Photographic cameras	11.1	30.7	88.3	22.6	23.5	23.0
	Other products						
243	Wood simply worked	24.7	21.9	21.0	—2.4	—0.8	—1.6
332	Petroleum products	5.0	17.1	28.4	27.8	10.7	19.0
ex 411.1	Whale oil	17.5	20.6	7.8	3.3	—17.7	—7.8
641	Paper and paper board	24.9	45.1	68.9	12.6	8.8	10.7
631.2	Plywood and veneered panels	51.1	64.2	78.6	4.7	4.1	4.4
629.1	Rubber tires and tubes	19.6	41.1	90.6	16.0	17.1	16.5
612.3 851	Footwear	16.9	72.1	107.2	33.7	8.3	20.3
894.2(3)-(5)	Toys	59.5	87.2	107.5	8.0	4.2	6.1
894.4	Sporting goods	6.9	21.0	46.4	24.9	17.2	21.0

SOURCES: Ministry of International Trade and Industry (Japan), *History of Post-war Japanese Foreign Trade* (in Japanese), Tokyo, 1967; MITI, *Official report on foreign trade 1969* (in Japanese), Tokyo, 1969.

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JAPAN: SUMMARY OF PRINC

Objectives		*Measures*
Establishment and improvement of basic conditions for industry	Promotion of investment in industry in general	Encouragement of competition between enterprises Gradual and selective introduction of foreign comp Financing of investment in industry Exemption from customs duties of imports of mach particularly for purposes of rationalization or the duction of new technology Fiscal incentives; revaluation of capital of enterprises; term amortization, etc. Granting larger quotas of foreign exchange for the imp machinery
	Promotion of investment in selected industries	Government financing Special measures for the promotion of basic industri Special measures for the promotion of new industrie strategic industries
	Encouragement of technological progress and introduction of foreign technical processes	Restriction of direct foreign investment Guidance and administration of the introduction of f technology Preferential allotment of foreign currency for the pa of royalties and other expenses related to the introd of foreign technology Quantitative restrictions on imports of certain product ticularly products manufactured by new technical pr Measures to promote Japanese technical progress General application of quality control and production c Standardization: establishment and periodical revie standards
Direct or complementary measures relating to basic conditions	Improving access to foreign markets	Negotiations to secure most-favoured-nation treatmen prevent the application of article XXXV of the (Agreement on Tariffs and Trade Negotiations for the reduction of tariff and non-tariff b Negotiations to eliminate discriminatory treatment c ports of Japanese products
	Export promotion in general	Formulation of goals, strategies and other general point nected with export promotion Goals, strategies etc. at different levels Publicity campaigns in export promotion
	Export promotion through direct incentives	Exemption from export duties Exemption from reimbursement of or compensation f mestic taxes Drawback Exemption from taxes on export income Short-term credit for exports Repayment of excessive costs of raw materials
	Measures to improve conditions for exporting	Price stabilization, etc. Quality inspections control Design control and guidance Export insurance Market research regarding foreign markets and infor services Exhibitions and publicity Technical assistance, training, etc.
Special measures for selected industries and enterprises	Promotion of exports of machinery	Research, information, exhibitions, etc. on machiner export in general Measures to promote the export of light machinery Measures to promote the export of machine tools Measures to promote exports of heavy machinery and trial plant Preference given to long-term financing of exports c chinery
	Special measures to assist trading companies	Authority to maintain own accounts in foreign curren Establishment of unions of small and medium-sized mercial enterprises
	Promotion of exports of small and medium-sized commercial enterprises	Credit for exporting, rationalization, and market resear Technical assistance Direct purchases and special exhibitions

tinued)

PORT PROMOTION MEASURES

Legislation	*Bodies responsible*
Anti-monopoly law (1947-)	Anti-monopoly commission
Programme for the relaxation of quantitative restrictions (1960-)	Ministry of Finance and other industries
Reduction of customs tariffs through negotiation	Bank of Japan (Central Bank) and other
Law encouraging the rationalization of enterprises (1952-)	Ministry of International Trade and Industry (MITI)
In accordance with foreign currency budgeting system authorized by the foreign exchange and foreign trade control law (1950-)	MITI
Special budget for loans and investment	Development Bank of Japan
Rationalization programmes for electric energy, coal, iron or steel, maritime transport and fertilizers (First five-year programme 1951-55 Second five-year programme 1956-60)	MITI
Laws on development of the machine-producing and electronics industries (1956-) Programmes for the development of the petrochemical, synthetic fibres and resins industries and other industries (1955-)	MITI
Law on foreign investment (1950-)	Council for the administration of foreign capital (MITI and other ministries)
Foreign exchange and foreign trade control law (1950-)	MITI and other ministries
	Council on Science and Technology Office of Science and Technology Industrial Technology Institute (MITI)
	Industrial Technology Institute Japan productivity centre, etc.
Law on industrial standards (1949-), Law on the control of energy (1951), etc.	Industrial Technology Institute (MITI)
Law on customs tariffs, etc.	Ministry of Finance, MITI Ministry of Foreign Affairs
Law organizing the Prime Minister's Office (provisions relating to councils)	Supreme Conference on Export (1954-) Meetings on individual industries, products and provinces: meetings abroad Chamber of Commerce and industry and JETRO
(There are no export duties) (No domestic duties are levied on export products) Law on customs tariffs (1953-64)	
There have been practically no problems connected with high-cost inputs except immediately after the war, when subsidization was the remedy	Ministry of Finance Ministry of Finance Bank of Japan (Central Bank) Export-Import Bank of Japan
Law on import and export transactions (1952-) Export inspection law (1948-1957) (Amendment) (1957-) Law on import and export transactions (1952-) Export commodities design law Law on export insurance (1950-) Law organizing JETRO (1958-)	Associations of exporters (MITI), etc. MITI, government laboratories, etc. Design centres; JETRO Insurance companies underwritten by MITI JETRO, head office (1951-) and 69 branch offices abroad
Law organizing JETRO (1958-), etc.	JETRO: JETRO trade centres in foreign countries (1954-) floating exhibition association MITI; training centre; JETRO, etc.
Law organizing JETRO (1958)	Twenty-seven JETRO machinery centres in foreign countries MITI
Law on export of light machinery (1955)	MITI; Japanese association for the export of machine tools Japan Plant Association Export-Import Bank of Japan
	MITI
	Funds for small and medium-sized enterprises Central and local government laboratories and institutes JETRO

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